

## DEPARTMENT OF HEALTH SERVICES

## TOXIC SUBSTANCES CONTROL DIVISION

## REGION 4

245 WEST BROADWAY, SUITE 350  
LONG BEACH, CA 90802  
(213) 590-4868

## Preliminary Assessment



Date: April , 1989  
Prepared by: Hortensia Muniz  
DHS - Toxic Substances Control Division  
Region 4 (Long Beach)  
(213) 590-4915

Site: McDonnell Douglas Space Systems Company  
5301 Bolsa Avenue  
Huntington Beach, Orange County California

EPA ID# CAD008384588

ASPIS# 30-37-0194

Site Description:

McDonnell Douglas Space Systems Company (McDonnell Douglas) formerly known as McDonnell Douglas Astronautics Company is located at 5301 Bolsa Avenue in Huntington Beach, CA (Fig 1). On December 1, 1988 the facility McDonnell Douglas Astronautics Company broke up into three operating divisions McDonnell Douglas Space Systems Company, McDonnell Douglas Electronics Systems Company and McDonnell Douglas Missile Systems Corporation. All three remain at the former facility site and operate under the same EPA number. (5) The site is bound by a residential area to the north and east, light industrial to the south and Seal Beach Naval Weapons to the west. (1)

McDonnell Douglas has been in operation since 1963 and has been the sole owner of the site. Prior to 1975, the facility was an assembly and checkout facility with little or no manufacturing. (5) In 1975, manufacturing was incorporated as a regular function at the facility. The facility, under contract with the Department of Defense, manufactures aircraft and their components. Generally work phases change throughout the year and depending on production requirements, hazardous wastes generated vary. All waste material is either treated on site or transported for recycling and disposal. The facility generates approximately 84 tons of hazardous waste per year and is hauled by Transamerica Environmental, IT, and Disposal Control Services. (5)

All of the current 15 acres at McDonnell were purchased in 1962. (5) Since that time expansion of the facility has occurred solely on site. The only other use has been agricultural. Douglas Realty Co. Inc, a paper company for McDonnell Douglas is responsible for leasing the adjacent vacant lots. The two lots are both property of McDonnell Douglas and have been leased to farmers over the years and are presently cultivated. (5)

Apparent Problem:

The facility was identified by the Department of Health Services through a telephone book search under the site evaluation program, in 1981. In February 1989 a followup drive by was conducted by DHS. Activities on site



were not visible, however fenced-in and excavated areas were observed. During a meeting, McDonnell Douglas representatives indicated that the parcels had been excavated and leveled for construction by West Coast University later when the funds were drained the project was dropped. Currently, McDonnell Douglas is negotiating with West Coast University for the upper most lot located in back of the facility.

In August 1986, McDonnell Douglas undertook a facility-wide underground hazardous material/waste storage tank removal program. A total of nineteen underground tanks were removed from nineteen different locations. The program was under-taken in coordination with the Orange County Health Care Agency (OCHCA). Soil samples collected from the base of the tank excavation locations indicated the presence of Volatile Organic Compounds and chlorinated alkanes. Those detected were carbon tetrachloride; 1,2-dichloroethane; 1,1,1-trichloroethane; 1,1,2,2-tetrachloroethane; chlorinated alkenes 1,1-dichloroethylene; trichloroethylene, and one aromatic compound toluene. (6)

Based on these results, OCHCA issued a letter directing McDonnell Douglas to develop and submit a site assessment plan detailing the proposed investigative measures. The letter also required McDonnell Douglas to submit a report following the field investigation outlining the findings of the investigation and providing proposals for mitigation and remedial action at the site. (6, Appendix C.)

In May 1987, McDonnell Douglas submitted the "Final Phase I Site Assessment Work plan for McDonnell Douglas Astronautics Company, Huntington Beach, California". Subsequent Phase I reports include May 1, 1987, and October 9, 1987. (Appendix C.)

Analytical results, indicating the presence of VOC concentrations in groundwater, prompted McDonnell Douglas to notify the Regional Water Quality Control Board-Santa Ana Region, who assumed the lead role for Phase II of the Site Assessment. Phase II Final Site Assessment, and Final Interim Remedial Measures Plan reports were completed and submitted November 1988 to RWQCB. (5,6)

#### Regulatory Process:

The site is currently active and regulated by RCRA as a generator. Orange County Health Care Agency and the Huntington Beach Fire Department HAZMAT TEAM are the designated lead agencies concerning spills and underground storage tank removal. The California Regional Water Quality Control Board - Santa Ana Region has been the lead agency in site mitigation from contaminated groundwater and soils beneath the site. The facility is also permitted with SCAQMB and is inspected annually. (Appendix C)

There are three underground storage tanks used for fuel storage and are annually inspected and monitored at the request of the Orange County Health Care Agency. (5, Appendix C)

HRS Factors:

Observed Releases:

There is documented release of hazardous substance and/or wastes to the environment. Laboratory results have confirmed that soil at the site is extensively contaminated with several solvents. Groundwater Samples indicated the presence of freon 113, trichloroethylene (TCE), 1,1-dichloroethylene, 1,1,1-trichloroethane, 1,1-dichloroethane, Methylene chloride and toluene all exceeding action levels. (6, Appendix C)

Direct Contact/Fire and Explosion:

The facility is located in an urban area and completely enclosed by either a six or eight feet chain link fence. The property is highly guarded with very limited access; clearance is required. (5) The predominant adjacent land use in the surrounding area is residential, with scattered parcels of industrial and commercial establishments. Major urban areas in the vicinity of the facility are Huntington Beach (186,800), Seal Beach (27,400) and Santa Ana (227,400) (2). Five public schools are within a one mile radius.

Ground Water:

The primary ground water aquifer lies at a depth of 300 to 900 feet. (6) The aquifer is believed to be artesian and supplies potable and irrigation water. (6) The most prominent geologic feature is the Newport-Inglewood fault zone located one mile southwest from the site. Four active groundwater wells are within a one mile radius, three are owned by the City of Huntington Beach and one by the City of Westminster (Figure 1-2). The total population served by these wells is unknown. Water from these wells is normally introduced into the system and depending on the demand the water may essentially go anywhere and ultimately serve 10,000 people (7). The facility is regionally located in a lowland area referred to as the Sunset gap. Results from the Phase I and Phase II Site assessments indicated that approximately the first 100 feet are unconsolidated Holocene Pleistocene alluvial deposits. The upper 100 feet is primarily composed of multiple sandy silty waterbearing strata.

Surface Water:

The closest surface water to the site is the Pacific Ocean located approximately one mile south. (1) The site is nearly level with an average slope of .167% grade (1). The Bolsa Chica Channel abuts the west side of the site and is the main storm drain of the Seal Beach and Huntington Beach area. The channel drains into the Anaheim Bay. (1)

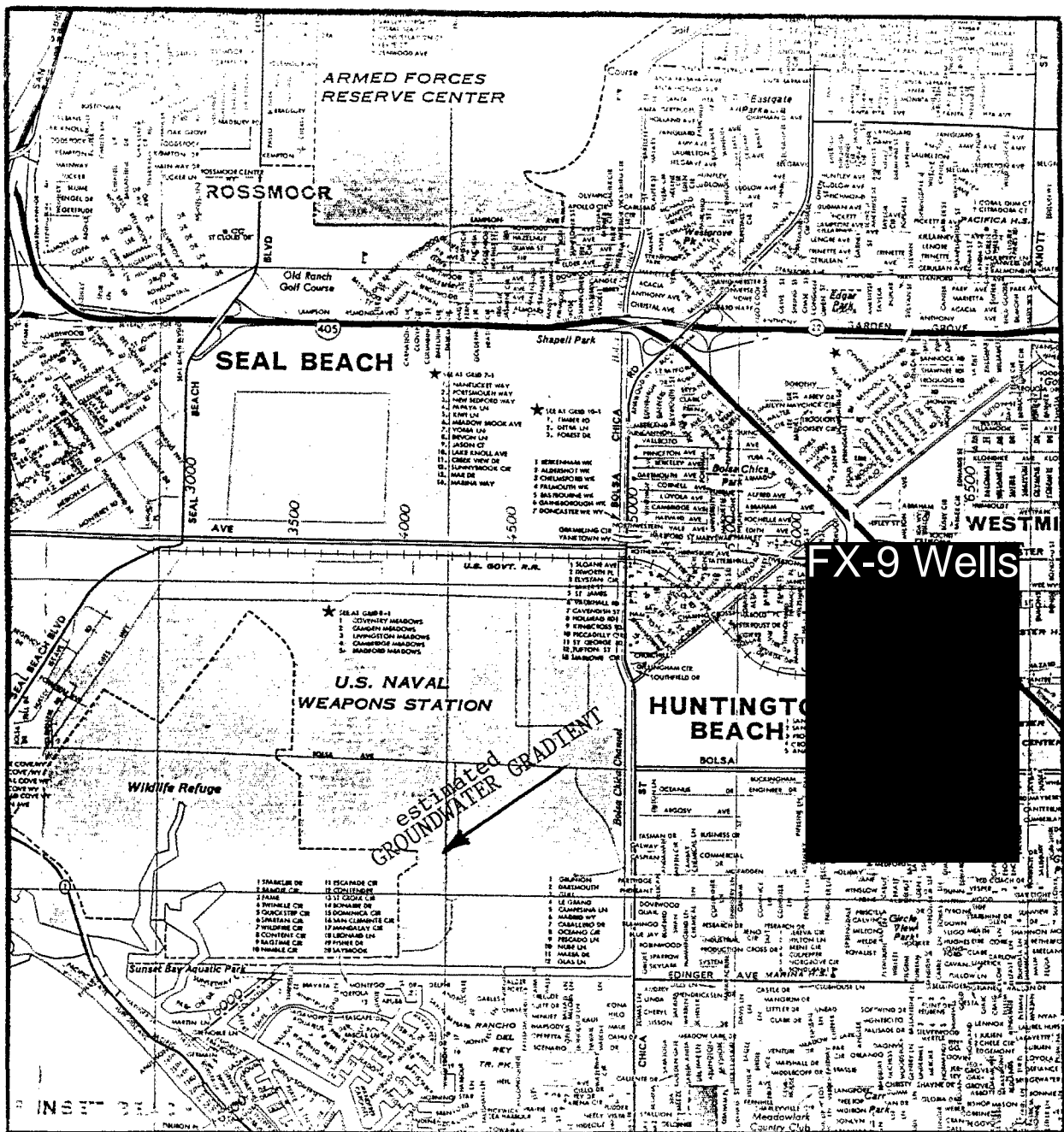


FIGURE 1-2

Well Location Map

Air:

There is no documented observed release of hazardous substances to the air.  
(Appendix C)

Other Factors:

The site is located approximately one mile away from the Seal Beach National Wildlife Refuge. Five species of birds, listed as endangered species by federal and state agencies, are known to inhabit the refuge and neighboring area.

Conclusions/Recommendations:

McDonnell Douglas located at 5301 Bolsa Avenue in Huntington Beach has been in operation since 1963. In 1986 the facility undertook a facility wide removal program of fuel and hazardous waste storage tanks. Soil samples from the tank excavation locations indicated the presence of hazardous contamination in the soils. Subsequent analysis revealed groundwater contamination. Since then, McDonnell Douglas has been actively involved with OCHCA, and RWQCB in mitigating the site. Currently, an extraction and treatment of groundwater in the uppermost saturated zone, has been proposed and is under review by RWQCB. There is no documentation contaminants have migrated of site. In view of S.A.RWQCB and OCHCA involvement, the following recommendations are made.

EPA: A medium priority site investigation under CERCLA.

DHS: A medium priority site investigation under CERCLA.

#### REFERENCES

1. U. S. G. S. Topographic Map, Seal Beach (Figure 1-1)
2. Thomas Guide (Figure 1-2)
3. Soil Survey of Orange County and Western Part of Riverside County, California, United States Department of Agriculture Soil Conservation Service and Forest service, 1978
4. Geologic Map of Orange County, California, Paul K. Morton and Russell V. Miller, 1973
5. Meeting held with McDonnell Douglas Representatives on February 22, 1989 and Data Sheet.
6. Kennedy, Jenks, Chilton, Phase II Site Assessment McDonnell Douglas Astronautics Company, Huntington Beach, CA November 88
7. Contact Report, Hortensia Muniz, Department of Health Services with Ed Barbley, Agency

CONTACT REPORT

AGENCY: City of Huntington Beach - Water Operations

ADDRESS:

PERSON

CONTACTED: Ed Barbley

PHONE: (714) 536-5424

FROM:

TO:

DATE: 3-27-89

SUBJECT: Population served by wells #7 #1 and #8

Population served depends on the demand for a particular day. Water is normally introduced into the system and once its in the system the water essentially goes anywhere from one mile to several miles. The water may ultimately serve 10,000 people. Water from #4 is pumped into a reservoir and blended with water from #2 and then pumped out into the distribution.

#1 is a small producing well serves from 200-300, #7 varies alot and services anywhere from 1000-1500 at one time, all are ultimately mixed.



CONTACT REPORT

AGENCY: ORANGE COUNTY HEALTH CARE AGENCY - ENVIRONMENTAL HEALTH

ADDRESS:

PERSON

CONTACTED: Robert (Bob) Holmes

PHONE: (714) 834-8174

BY: Hortensia Muniz

DATE/TIME: 3-24-89/8:45

SUBJECT: McDonnell Douglas

## APPENDICES

### Appendix A

- Data Sheet
- Facility Map
- Facility Pictures

### Appendix B

- Incident Reports
- Hazardous Waste  
Generators On site

### Appendix C

- Correspondence - other agencies
- News Release

### Appendix D

- Correspondence DHS  
Contact Reports

APPENDIX A

- Data Sheet
- Facility Map
- Facility Pictures

U.S. Environmental Protection Agency  
California Department of Health Services  
Preliminary Assessment Data Sheet

1. Site Name (Operator of Record): McDonnell Douglas Space Systems co
2. Identification Number
- a. EPA ID #: CAD008384588
- b. ASPIS Facility File #: 30-37-0194
3. Location Identification
- a. Street Address: 5301 Bolsa Ave
- b. County: Orange
- c. Latitude, Longitude: 33 44 58  
(or township, range & section)
- d. Assessor's Parcel Number: 19511106

	Information	Source
4. Owners:		
Name, address, phone	McDonnell Douglas Space Systems Co.	
number and years of	5301 Bolsa Ave	
ownership (starting	Huntington Beach, Ca 92647	
with present)	(714) 896 3411	
	Built starting in 1960	

5. Record of Operators:
- Name, address, phone same as 4
- number and years of On the first of december 1988 MDAC broke up into  
operation three operating divisions; Md Electrical systems Co  
a. Operator of MD Missile Systems CO. and MD Space Systems  
record: all three operate under the same EPA id number and  
parent corporation is in St Louis Missouri

## Information

## Source

- b. ~~Current Operator~~:  
site history      The site was purchased sometime in the 60's between 1961 and 1963 the facility construction began. The facility has expanded since.  
Douglas realty is a paper company has has the title to the strawberry plot
- 
- c. Historical  
Operators of Concern:      Operations have remained the same except that prior to 1975 the facility assembled checked and little manufacturing after 1975 manufacturing was incorporated as a regular function
- 
- . Status      active   X   inactive
- 
- . For each operator of concern specify:
- a. Type of business      ~~Aerospace research and development~~  
aerospace research and development
- 
- b. Disposal Practice      waste water treatment and off site disposal
- 
- c. Waste Types  
(physical state and quantity)      solids and liquids  
reference appendix
- 
1. Reactivity/  
Flammability(NFPA classification)
- 
2. Incompatibility
- 
3. Toxicity/persistence      the highest persistence /toxicity was determined for contaminants found in the soil and groundwater beneath the site.  
see number 11

## Information

## Source

8. Waste Containment/  
storage facility: have some above ground storage tanks used for holding  
waste for future transporting
- a. Primary (e.g.  
clarifier, tanks)
- b. Secondary (e.g.  
berms, dike, paving)
9. Site accessibility:  
(e.g. fence) site is fenced in with six or eight foot fence clearance is  
required to enter facility
10. Incidents: (describe four incidents have been reported by this facility, however  
any spills, fire or only three occurred at this facility. HAZMET and the  
explosion) local county health responded.
- \*\*\*
- In 1986 MD undertook an underground storage tank removal program as a result  
from testing the soils beneath the tanks, leakage from the tanks was  
determined. Analysis of the soils indicated detectable levels of  
carbon tetrachloride, 1,2 dichloroethane, 1,1,1 trichloroethane  
1,1,2,2 tetrachloroethane, 1,1 dichloroethylene, trichloroethylene toluene
11. Documented adverse  
health effects: carbon tetrachloride 18 toluene 9  
1,2 dichloroethane 12  
toxicity/persistence 1,1,1 trichloroethane 15  
in groundwater 1,1,2,2 tetrachloroethane 18  
1,1 dichloroethylene 15  
trichloroethylene 12
12. Inspection:  
(date, type, agency  
and recommendation)

good  
WPA

## Information

## Source

13. Enforcement history:  
(date, type of action file searches do not indicate ongoing violations requirements, and outcome)

14. Potential Release:  
(specify documented releases)

a. ground water ther is a potential for groundwater release. Ongoing ground water studies since 1986 indicate groundwater contamination at 60' below ground surface

b. surface water

c. air

d. direct contact

highly secured facility; no likelihood

e. fire and explosion

15. Net Precipitation:

a. net seasonal rainfall

b. evaporation

c. mean annual precipitation 1.36 3.60

d. 1 year-24 hour rainfall 3 inches

includes  
in PA

- |     | Information   | Source  |
|-----|---|---|
| 16. | Flood plain status:<br>(inclusive to 500<br>year plain)   |   |
| 17. | Predomient wind<br>speed and direction:   |   |
| 18. | Facility slope: 5/3000<br>(rise/run)  | USGS Seal Beach Map                               |
| 19. | Soil type/profile:<br>Hueneme Bolsa association; nearly level and poorly drained,<br>fine sandy loams. silt loams   |   |
|     |   | soil conservation 77                              |
| 20. | Depth to aquifer<br>of concern: 300-900   |   |
| 21. | Ground water use<br>and population<br>served: includes municipal , domestic, and irrigation<br><br>The population served depends on the demand however ther is<br>a likelyhood that 10,000 be served. | City of Huntington Beach<br>ED Barbley<br>3/28/89 |

good



Information	Source
22. Distance to nearest well drawing from aquifer of concern *: 1/4 mile located on northeast corner	! important
23. Surface water use and population served:	NONE
24. Distance to surface water *: 1 mile	
25. Distance to water intake *: Bolsa Chica Channel borders the facility	
26. Land use: (include distance to food processing or agricultural production) adjacent lots are used for agriculture currently cultivated with strawberries	
27. Distance to sensitive environment/critical habitat *: approximately one mile	USGS map

\* measured from hazardous substances

## Information

## Source

28. Distance to nearest population: Nearboring areas are residential located less than a mile away. driveby in conjunction with topp map.
29. Population within 3 mile radius and/or number of people residing or working near site: 

Huntington beach	186,800	1988 Thomas Guide Orange County cities and communities
seal beach	27,400	
santa anna	227,400	
30. Proximity to schools, hospitals, nursing homes, or other sensitive populations: \* five public school are within a one mile radius \* within one mile of a wild life refuge. five species of inhabit the area are listed on the endangered species list.
31. Recommendation:
- A. EPA recommendation: Site investigation under CERCLA is recommended for the following reasons
- B. DHS recommendation:

Preparers Name Hortensia MUniz

Date \_\_\_\_\_

Supervisors Name Al Arellano

Supervisors Signature \_\_\_\_\_



DATE \_\_\_\_\_

TIME 2:00 A.M. P.M.

DIRECTION: N NNE NE ENE

E ESE SE SSE

S SSW SW WSW

W WNW NW NNW

WEATHER Good

SITE McDonnell Douglas

TDD# \_\_\_\_\_

PHOTOGRAPHED BY: \_\_\_\_\_

SAMPLE ID# (if applicable) \_\_\_\_\_



DESCRIPTION: \_\_\_\_\_

FRONT OF FACILITY

DATE \_\_\_\_\_

TIME \_\_\_\_\_ A.M. P.M.

DIRECTION: N NNE NE ENE

E ESE SE SSE

S SSW SW WSW

W WNW NW NNW

WEATHER \_\_\_\_\_

SITE \_\_\_\_\_

TDD# \_\_\_\_\_

PHOTOGRAPHED BY: \_\_\_\_\_

SAMPLE ID# (if applicable) \_\_\_\_\_



DESCRIPTION: \_\_\_\_\_

DATE \_\_\_\_\_  
TIME \_\_\_\_\_ A.M. P.M.  
DIRECTION: N NNE NE ENE  
E ESE SE SSE  
S SSW SW WSW  
W WNW NW NNW

WEATHER \_\_\_\_\_

SITE \_\_\_\_\_

TDD# \_\_\_\_\_

PHOTOGRAPHED BY: \_\_\_\_\_

SAMPLE ID# (if applicable) \_\_\_\_\_

DESCRIPTION: \_\_\_\_\_



DATE \_\_\_\_\_  
TIME \_\_\_\_\_ A.M. P.M.  
DIRECTION: N NNE NE ENE  
E ESE SE SSE  
S SSW SW WSW  
W WNW NW NNW

WEATHER \_\_\_\_\_

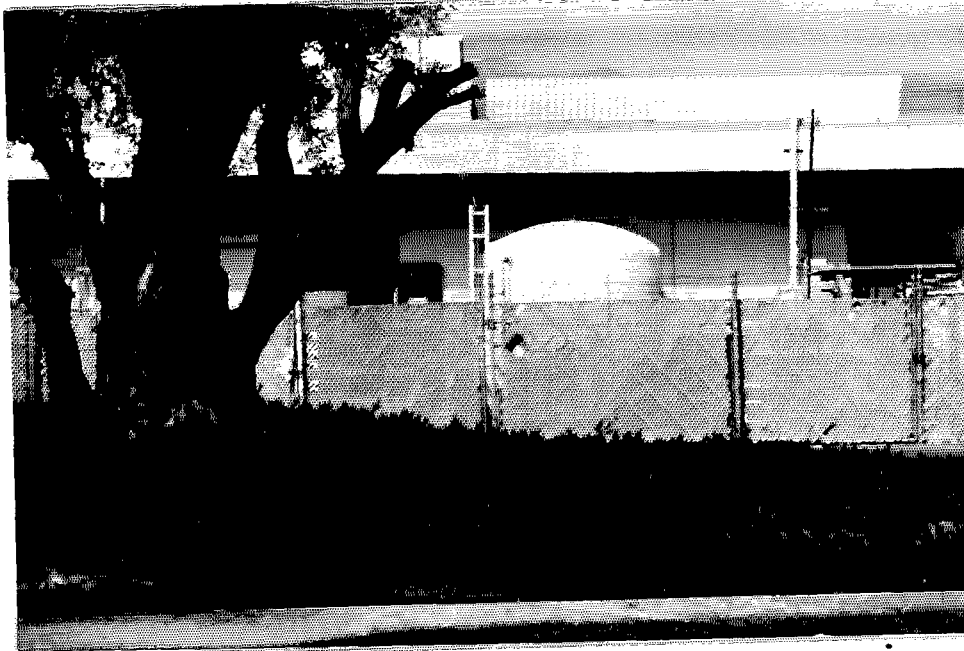
SITE \_\_\_\_\_

TDD# \_\_\_\_\_

PHOTOGRAPHED BY: \_\_\_\_\_

SAMPLE ID# (if applicable) \_\_\_\_\_

DESCRIPTION: \_\_\_\_\_



DATE \_\_\_\_\_  
TIME \_\_\_\_\_ A.M. P.M.  
DIRECTION: N NNE NE ENE  
E ESE SE SSE  
S SSW SW WSW  
W WNW NW NNW

WEATHER \_\_\_\_\_

SITE \_\_\_\_\_

TDD# \_\_\_\_\_

PHOTOGRAPHED BY: \_\_\_\_\_

SAMPLE ID# (if applicable) \_\_\_\_\_



DESCRIPTION: \_\_\_\_\_

DATE \_\_\_\_\_  
TIME \_\_\_\_\_ A.M. P.M.  
DIRECTION: N NNE NE ENE  
E ESE SE SSE  
S SSW SW WSW  
W WNW NW NNW

WEATHER \_\_\_\_\_

SITE \_\_\_\_\_

TDD# \_\_\_\_\_

PHOTOGRAPHED BY: \_\_\_\_\_

SAMPLE ID# (if applicable) \_\_\_\_\_



DESCRIPTION: BACK OF FACILITY - EXCAVATED LOT  
PROPOSED SITE FOR DEVELOPMENT BY  
WEST COAST UNIVERSITY

DATE \_\_\_\_\_  
TIME \_\_\_\_\_ A.M. P.M.

DIRECTION: N NNE NE ENE  
E ESE SE SSE  
S SSW SW WSW  
W WNW NW NNW

WEATHER \_\_\_\_\_

SITE \_\_\_\_\_

TDD# \_\_\_\_\_

PHOTOGRAPHED BY: \_\_\_\_\_

SAMPLE ID# (if applicable) \_\_\_\_\_



DESCRIPTION: \_\_\_\_\_

PROPOSED FOR DEVELOPMENT BY  
WEST COAST UNIVERSITY

DATE \_\_\_\_\_  
TIME \_\_\_\_\_ A.M. P.M.

DIRECTION: N NNE NE ENE  
E ESE SE SSE  
S SSW SW WSW  
W WNW NW NNW

WEATHER \_\_\_\_\_

SITE \_\_\_\_\_

TDD# \_\_\_\_\_

PHOTOGRAPHED BY: \_\_\_\_\_

SAMPLE ID# (if applicable) \_\_\_\_\_

PHOTO

DESCRIPTION: \_\_\_\_\_

APPENDIX B

- Incident Reports
- Hazardous waste/generators on site



**MCDONNELL DOUGLAS AERONAUTICS COMPANY**

5301 Bolsa Avenue, Huntington Beach, CA 92647 (714) 896-3311

D. R. Jordan  
A67-711

5 February 1988  
DRJ:88-122

State Department of Health  
Toxic Substance Control Division  
107 S. Broadway  
Room 7011  
Los Angeles, CA 90012

Gentlemen:

Enclosed is the final report of the incident that occurred at our facility on 25 January 1988 as required under Title 22, Division 4, Chapter 30, Article 20, 67145 (j).

If there are further questions, contact the undersigned at 714-896-3848.



Duane R. Jordan  
Specialist - Environmental

DRJ/srb

Enclosure as noted above

**MCDONNELL DOUGLAS AERONAUTICS COMPANY**

5301 Bolsa Avenue, Huntington Beach, CA 92647 (714) 896-3311

D. R. Jordan  
A67-711

5 February 1988  
DRJ:88-121

Jeri Campbell  
USEPA, Region IX  
215 Freemont St.  
San Francisco, CA 94105

Attention: Spill Report Data Bank

Dear Ms. Campbell:

Enclosed is the final report of the incident that occurred at our facility on 25 January 1988 as required by 40CFR 265.56 (j).

If there are further questions, contact the undersigned at 714-896-3848.

  
Duane R. Jordan  
Specialist - Environmental

DRJ/srb

Enclosure as noted above

## FINAL REPORT

### RELEASE OF SPENT MACHINE COOLANT

The incident occurred at McDonnell Douglas Astronautics Company, 5301 Bolsa Avenue, Huntington Beach, CA 92647. The facility phone number is 714-896-3311.

The incident was confirmed on 25 January 1988 at 3:45PM.

The material involved was a petroleum hydrocarbon, confirmed by outside analysis. The Huntington Beach Fire Department Hazmet responded at 4:30PM and could not identify the substance. The Orange County Health Care requested the material be picked up and a sample be sent to an outside lab for analysis. The quantity involved was approximately five gallons.

There were no injuries associated with this incident.

The assessment of potential hazard to both human health and the environment was none.

All material was picked up along with the dirt underneath and placed in a metal container. The material will be repacked into drums and sent off-site by manifest for disposal.

**MCDONNELL DOUGLAS**

McDonnell Douglas Astronautics Company

D. R. Jordan  
A67-711

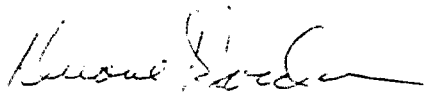
19 October 1988  
DRJ:88-226

State Department of Health  
Toxic Substance Control Division  
107 S. Broadway  
Room 7011  
Los Angeles, CA 90012

Gentlemen:

Enclosed is the final report of the incident that occurred at our facility on 16 October 1988 as required under Title 22, Division 4, Chapter 30, Article 20, 67145 (j).

If there are further questions, contact the undersigned at (714) 896-3848.



Duane R. Jordan  
Specialist-Environmental

DRJ/clo

Enclosure as noted above

McDonnell Douglas Astronautics Company

D. R. Jordan  
A67-711

19 October 1988  
DRJ:88-225

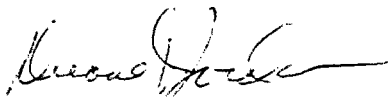
Jeri Campbell  
USEPA, Region IX  
215 Freemont St.  
San Francisco, CA 94105

Attention: Spill Report Data Bank

Dear Ms. Campbell:

Enclosed is the final report of the incident that occurred at our facility on 16 October 1988 as required by 40CFR 265.56 (j).

If there are further questions, contact the undersigned at (714) 896-3848.



Duane R. Jordan  
Specialist-Environmental

DRJ/clo

Enclosure as noted above

## Final Report

## Release of Chromic Acid Solution

The incident occurred at McDonnell Douglas Astronautics Company, 5301 Bolsa Ave., Huntington Beach, CA 92647 and the facility telephone number is (714) 896-3311.

The incident was confirmed on 17 October 1988 at 8:10AM. The incident occurred at 8:30PM on 16 October 1988.

The material involved was decanted chromic acid solution (4-4.5%) from process tank A9. The quantity spilled was approximately 25 gallons and immediate containment action prevented any material from entering the on-site storm drain. The Huntington Beach Fire Department HAZMET team responded on 17 October 1988 and concluded that there was a slight possibility that some very small quantity of chromic acid may have entered the storm drain.

There were no injuries associated with the accident. Based on the cleanup efforts, the assessment of the potential hazard to both human health and the environment did not present a significant risk.

The front edge of the 25 gallon spill was diked with absorbent pigs and the closest storm drain entrance was also diked prior to the liquid reaching the storm drain. The affected asphalt surface area was vacuumed, carefully flushed and vacuumed a number of times. The volume of flush liquid was 800-1000 gallons. All vacuumed material was disposed of on-site in the waste water treatment system. The absorbent pigs and other material will be disposed of at a Class I disposal site.

Because of the concern of the HAZMET team, the on-site storm drains were flushed. All flush material (12,000 gallons) was collected in a vendor's vacuum truck and disposed of in the on-site waste water treatment system.

*McDonnell Douglas Astronautics Company*

D. R. Jordan  
A67-711

13 February 1989  
DRJ:89-128

State Department of Health  
Toxic Substance Control Division  
Surveillance & Enforcement  
245 W. Broadway, Suite 350  
Long Beach, CA 90802

Gentlemen:

Enclosed is the final report of the incident that occurred at our facility on 7 February 1989 as required under Title 22, Division 4, Chapter 30, Article 20, 67145 (j).

If there are further questions, contact the undersigned at (714)896-3848.



Duane R. Jordan  
Specialist-Environmental

DRJ/rv

Enclosure as noted above

**MCDONNELL DOUGLAS**

*McDonnell Douglas Astronautics Company*

D. R. Jordan  
A67-711

13 February 1989  
DRJ:89-127


Jeri Campbell  
USEPA, Region IX  
215 Freemont Street  
San Francisco, CA 94105

Attention: Spill Report Data Bank

Dear Ms. Campbell:

Enclosed is the final report of the incident that occurred at our facility on 7 February 1989 as required by 40CFR 265.56 (j).

If there are further questions, contact the undersigned at 714-896-3848.



Duane R. Jordan  
Specialist-Environmental

DRJ/rv

Enclosure as noted above



FINAL REPORT  
RELEASE OF VACUUM PUMP OIL

The incident occurred at McDonnell Douglas Space Systems Company, 5301 Bolsa Ave, Huntington Beach, California 92647, and the facility telephone number is 714-896-3311.

The incident occurred at 8:40AM, 7 February 1989 inside building 28 at the south end of the utility corridor.

The material involved was vacuum pump oil. The quantity spilled was approximately one gallon. Because of previous use of the vacuum pump there was a possibility that some HF may have formed within the oil. Laboratory analysis confirmed that there was no HF in the oil. The Newport Beach HAZMET responded and provided oversight for the cleanup activities.

There were no injuries associated with the incident. The assessment of the potential hazard to both human health and the environment was that the incident did not present a significant risk.

The oil was cleaned up using absorbent pigs and rags which were collected and will be disposed of at a Class I disposal site.

STATE OF CALIFORNIA

P.O. BOX 647  
SACRAMENTO, CA 95803-0647BOARD OF EQUALIZATION  
EXCISE TAX UNIT**HAZARDOUS WASTE DISPOSAL REPORT - ANNUAL 'SUPERFUND' TAX****DUE ON OR BEFORE MARCH 1, 1989****FOR CALENDAR YEAR 1988****HS HQ 36-009352**

Mail to:

BOARD OF EQUALIZATION  
EXCISE TAX UNIT  
P.O. BOX 647  
SACRAMENTO, CA 95803-0647MCDONALD DOUGLAS ASTRONAUTICS CO.  
5301 BOLSA AVE.-D. JORDAN HS 49-2  
HUNTINGTON BEACH CA 92647**GENERATING SITE: SEE ATTACHED**

This report must be filed on or before the due date shown above by every person who submitted for disposal off-site, or who disposed of on-site, hazardous waste or extremely hazardous waste in California during the above calendar year. Do not include wastes that are recycled or transported out of state for disposal. Any fraction of a ton must be rounded up to the next whole ton. Any person disposing of 500 pounds or less during the above calendar year must report zero tonnage. **ANY PERSON WHO KNOWINGLY REFUSES TO FILE THIS REPORT AS REQUIRED SHALL BE LIABLE, UPON CONVICTION, FOR A CIVIL PENALTY PURSUANT TO SECTION 43602 OF THE HAZARDOUS SUBSTANCES TAX LAW.**

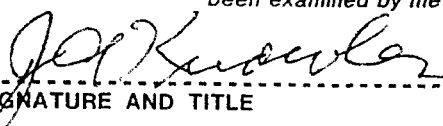
"HAZARDOUS WASTE" means a waste, or combination of wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may either:

- Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.
- Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

"EXTREMELY HAZARDOUS" means any hazardous waste or mixture of hazardous wastes which, if human exposure should occur, may likely result in death, disabling personal injury or serious illness caused by the hazardous waste or mixture of hazardous wastes because of its quantity, concentration, or chemical characteristics.

HAZARDOUS WASTE CATEGORIES	TOTAL TONS
A. The total tons of <b>HAZARDOUS</b> waste, the Federal Regulation of which has been suspended under the Solid Waste Disposal Act by Act of Congress, disposed of, or submitted for disposal, in California, plus the total tons of waste material transferred to a surface impoundment in California for the purpose of reducing water content of such waste and material by evaporation, plus the total tons of hazardous waste disposed of into an injection well or landfarm, exclusive of the waste reported in Categories D and E. NOTE: LAND FILL DISPOSAL IS NOT LAND FARMING.	.0
B. The total tons of <b>HAZARDOUS</b> waste disposed of, or submitted for disposal, in California exclusive of the waste reported in Categories A, C, D, and E. NOTE: LAND FILL ONLY.	84.0
C. The total tons of <b>EXTREMELY HAZARDOUS</b> waste disposed of, or submitted for disposal, in California exclusive of the waste reported in Categories A, B, D, and E. NOTE: LAND FILL ONLY.	1.0
D. The total tons of <b>HAZARDOUS</b> waste disposed of, or submitted for disposal, in California from the extraction, beneficiation and processing of ores or minerals including phosphate rock and overburden from mining or uranium ore.	.0
E. The total tons of <b>HAZARDOUS</b> waste disposed of, or submitted for disposal, in California that is a solid hazardous waste residue resulting from incineration. NOTE: This category does not normally include infectious waste.	.0
F. TOTAL TONS REPORTED (Add tons in categories A through E.)	.0

I hereby certify that this report, including any accompanying schedule and statement, has been examined by me and to the best of my knowledge and belief is true, correct and complete.

  
SIGNATURE AND TITLE

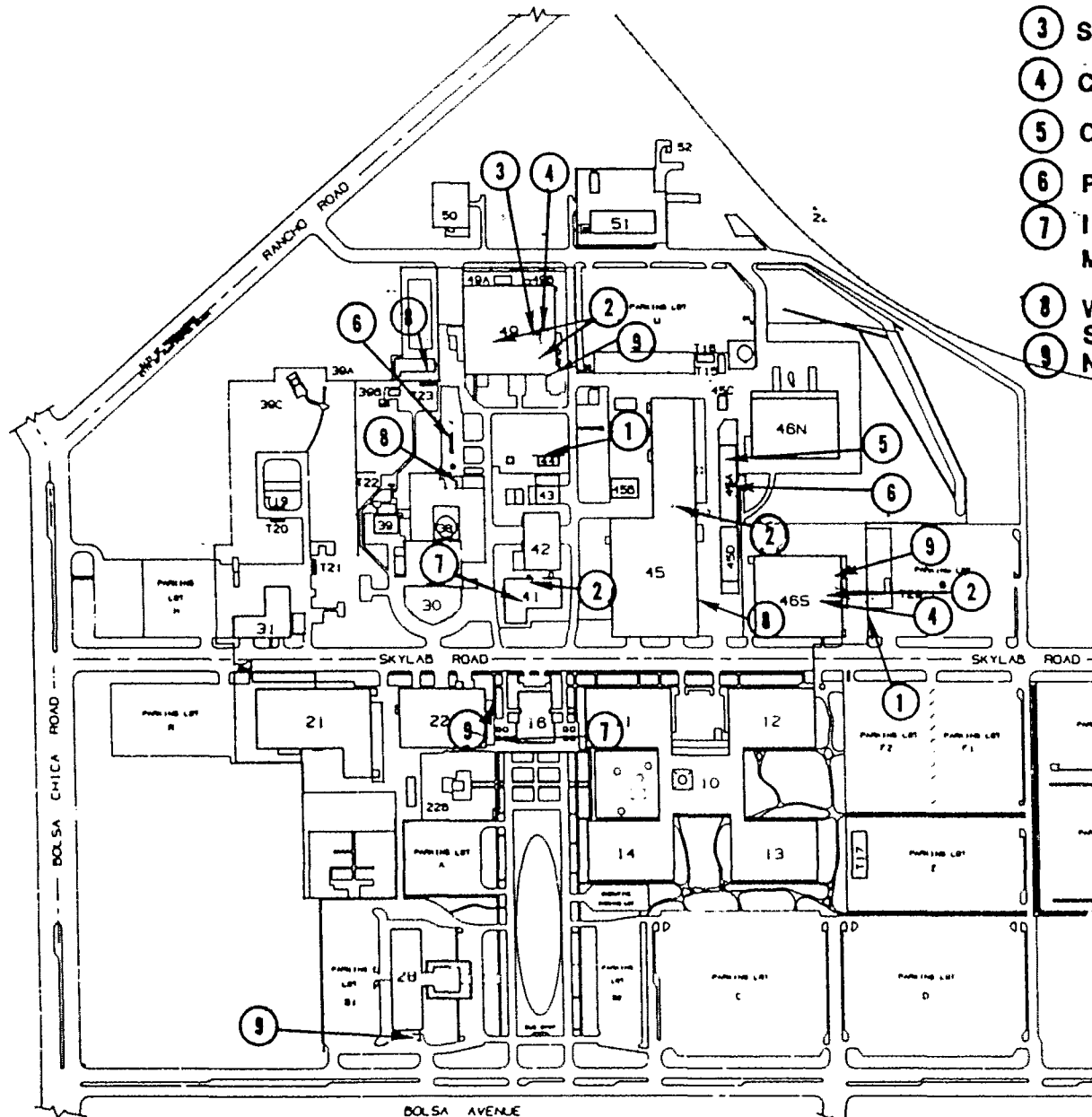
J. A. KNOWLES  
DIRECTOR FACILITIES (714) 896-2230  
PHONE NUMBER

DATE

If you have any questions regarding this report, please contact the  
State Board of Equalization, Excise Tax Unit, Phone (916) 739-2582

**TOXIC & FLAMMABLE CHEMICALS  
STORAGE, OPERATIONS AND WASTE**

- ① GASOLINE STORAGE & PUMPING
- ② TRICHLOROETHANE DEGREASERS
- ③ SODIUM NITRATE TANK
- ④ CHEMICAL PROCESS TANK 46S
- ⑤ OIL STORAGE
- ⑥ PAINT & SOLVENT STORAGE
- ⑦ ISOPROPYL ALCOHOL & METHYLENE CHLORIDE
- ⑧ WASTE OIL, SOLVENT, CHEMICAL STORAGE
- ⑨ NEUTRALIZATION SYSTEM

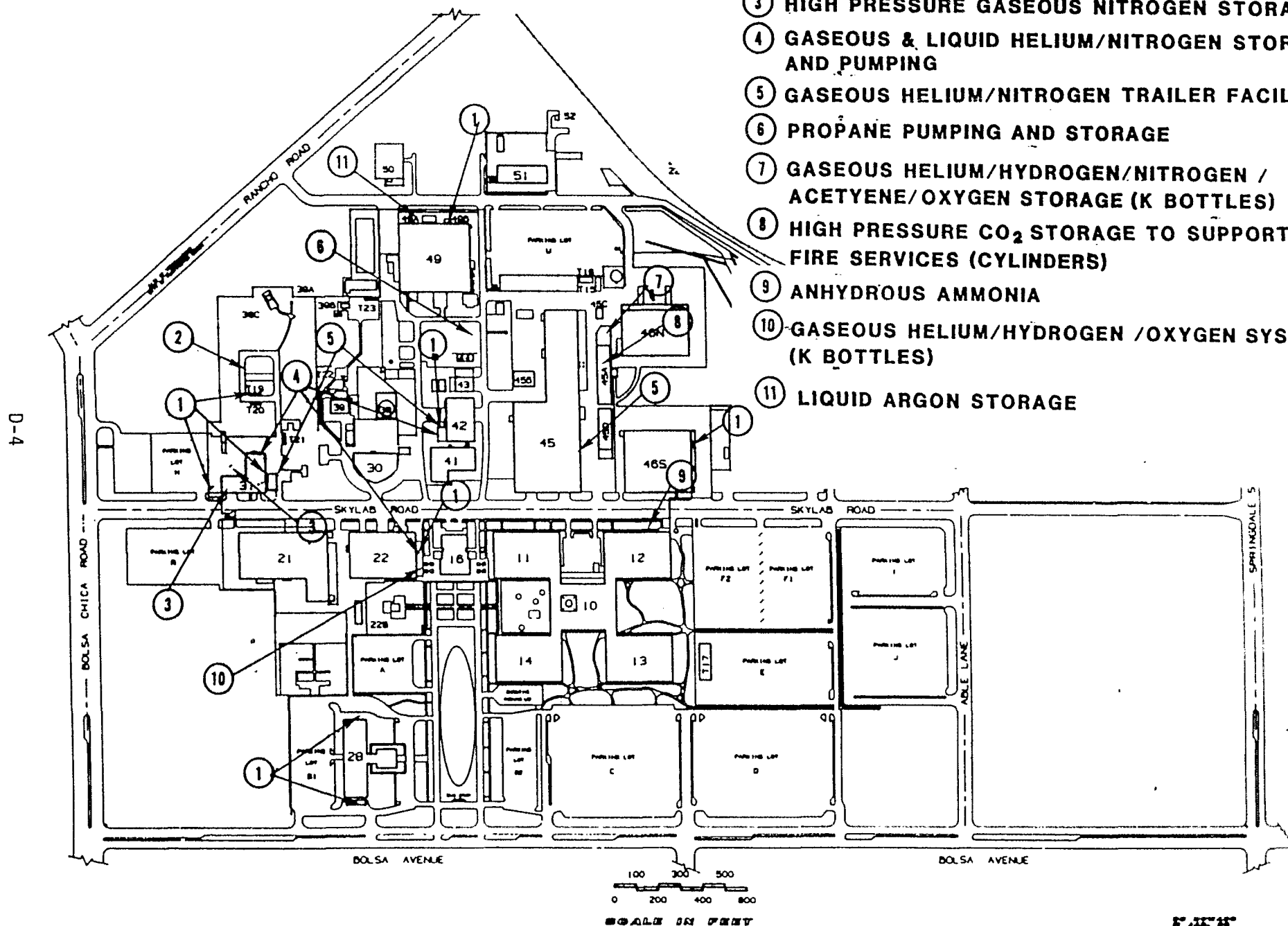


**FX-9 Wells**

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FEET

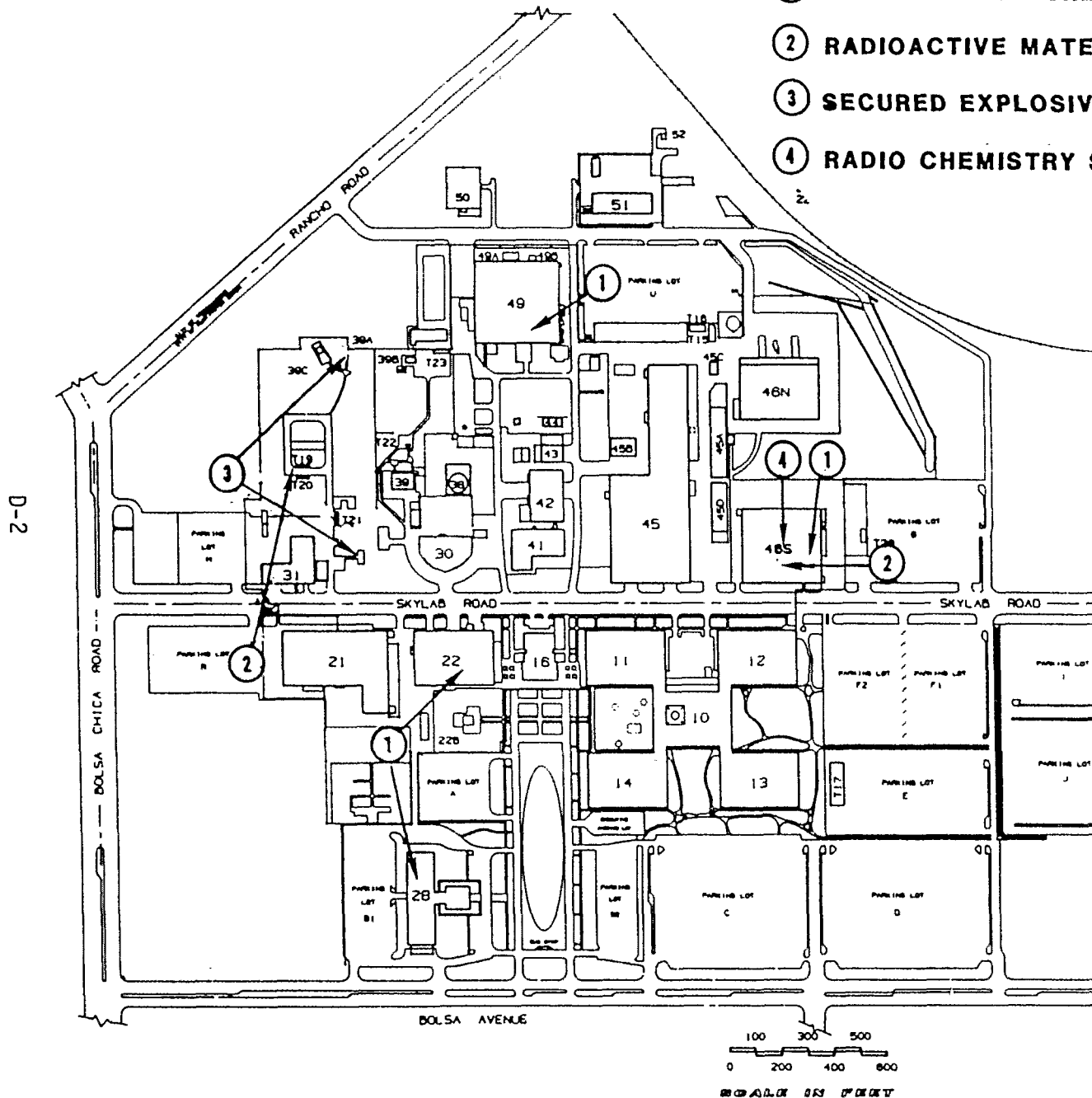
11 12 13 14

- ① LIQUID NITROGEN STORAGE
- ② LNG STORAGE AND TEST
- ③ HIGH PRESSURE GASEOUS NITROGEN STORAGE
- ④ GASEOUS & LIQUID HELIUM/NITROGEN STORAGE AND PUMPING
- ⑤ GASEOUS HELIUM/NITROGEN TRAILER FACILITY
- ⑥ PROPANE PUMPING AND STORAGE
- ⑦ GASEOUS HELIUM/HYDROGEN/NITROGEN / ACETYLENE/OXYGEN STORAGE (K BOTTLES)
- ⑧ HIGH PRESSURE CO<sub>2</sub> STORAGE TO SUPPORT FIRE SERVICES (CYLINDERS)
- ⑨ ANHYDROUS AMMONIA
- ⑩ GASEOUS HELIUM/HYDROGEN /OXYGEN SYSTEM (K BOTTLES)
- ⑪ LIQUID ARGON STORAGE



EXPLOSIVES, RADIOACTIVITY AND  
HIGH TEMPERATURE PROCESSING

- ① HIGH TEMPERATURE FURNACES
- ② RADIOACTIVE MATERIALS STORAGE
- ③ SECURED EXPLOSIVE STORAGE
- ④ RADIO CHEMISTRY STORAGE AND OPERATIONS

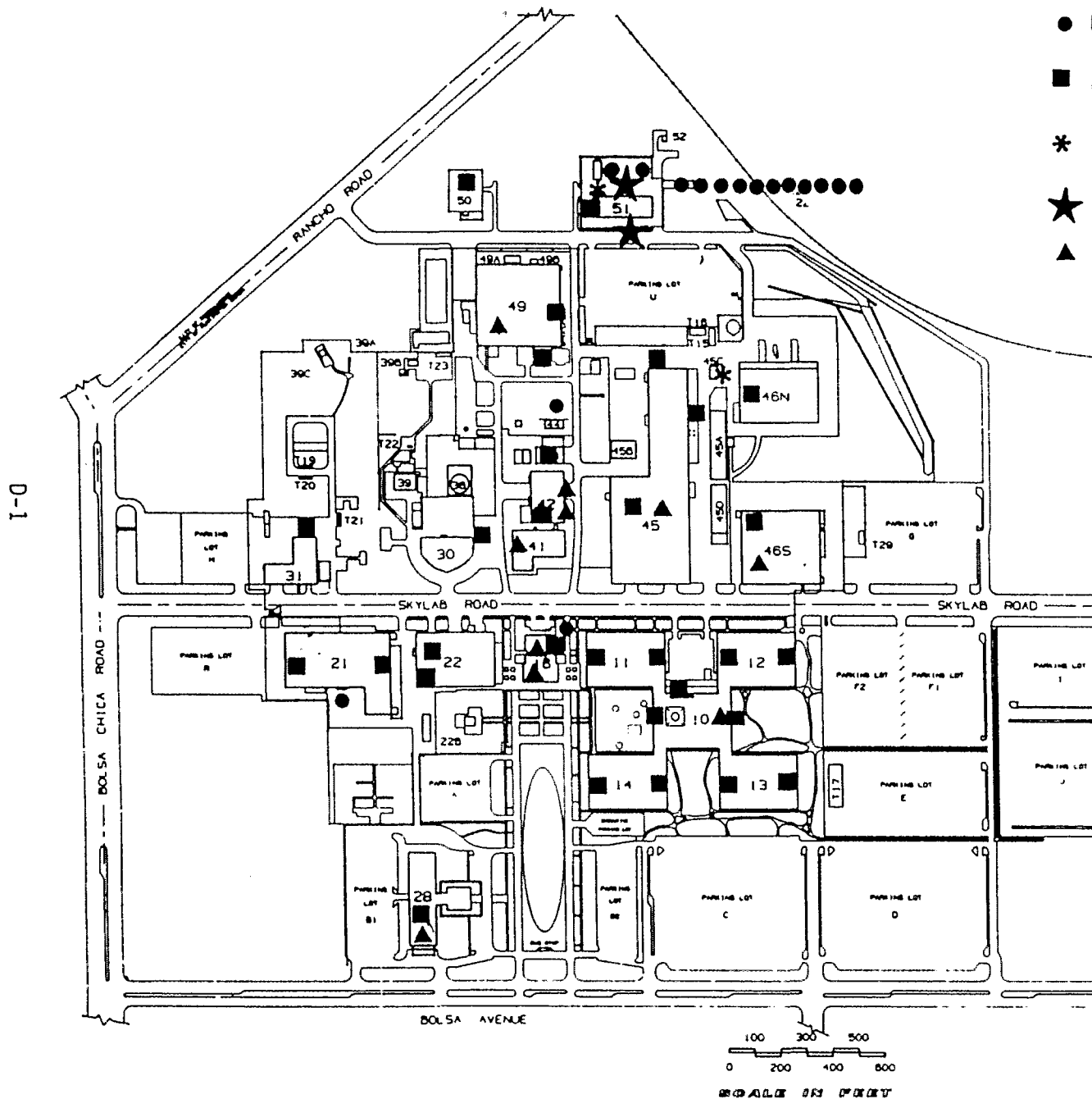


FX-9 Wells

# STEAM BOILERS, STEAM GENERATORS, ELECTRICAL SUB-STATIONS

## GAS METERS AND UNDERGROUND FUEL STORAGE

- UNDERGROUND FUEL STORAGE
- ELECTRICAL SUB-STATIONS
- \* STEAM BOILERS
- ★ GAS METERS
- ▲ STEAM GENERATORS



FX-9 Wells

# CALIFORNIA EXTREMELY HAZARDOUS WASTE DISPOSAL PERMITS

11 AUGUST 1983

<u>CHEMICAL</u>	<u>PERMIT NO</u>	<u>EXPIRATION DATE</u>
AMMONIUM BIFLUORIDE	3-3406	30 NOV 83 ✓
ARSENIOUS ACID	3-3727	31 MAR 84
ARSENIC PENTOXIDE	3-3727	31 MAR 84
ARSENIC PURIFIDE	3-3727	31 MAR 84
ARSENIC SULFIDE	3-3727	31 MAR 84
BALLAS-PCB	3-3727	31 MAR 84
BERYLLIUM	3-3406	30 NOV 83 ✓
BONDAID ETCHANT	3-3406	30 NOV 83 ✓
CHLORINE	3-4174	30 AUG 84
CYANIDE	3-3406	30 NOV 83 ✓
<del>FLUOBORIC ACID</del>	<del>3-3287</del>	<del>31 OCT 83 ✓</del>
FLUOBORIC ACID	3-3406	30 NOV 83 ✓
HYDROFLUORIC ACID	3-3406	30 NOV 83 ✓
HYDROGEN FLUORIDE	3-4175	30 AUG 84
HYDROGEN SULFIDE	3-4173	31 AUG 84
PENTABORANE	3-4176	30 AUG 84
MERCAPTAN-w/ZINC-2-MERCAPTOBENZOTHAZOLE	3-4177	30 AUG 84
SPENT MERCURY BATTERIES	3-3287	31 OCT 83 ✓
SPENT MERCURY BATTERIES	3-3406	30 NOV 83 ✓
SPENT MERCURY VAPOR LAMPS	3-3287	31 OCT 83 ✓
SPENT MERCURY VAPOR LAMPS	3-3406	30 NOV 83 ✓
HYDRAZINE	3-3812	30 APR 84
VINYL CHLORIDE	3-3812	30 APR 84

*V - will be renamed under different procedure*

APPENDIX C

- Correspondence - other agencies
- Newsrelease



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SANTA ANA REGION  
6809 INDIANA AVENUE, SUITE 200  
RIVERSIDE, CALIFORNIA 92506  
PHONE: (714) 782-4130



January 24, 1988

Mr. Duane Jordan  
McDonnell Douglass Astronautics Company  
5301 Bolsa Avenue  
Huntington Beach, CA 92647-2048

MCDONNELL DOUGLAS ASTRONAUTICS COMPANY, 5301 BOLSA AVENUE,  
HUNTINGTON BEACH; FINAL PHASE II SITE ASSESSMENT REPORT

Dear Mr. Jordan:

We have completed our review of the Final Phase II Site Assessment report. This document, dated November 10, 1988, was prepared by your consultant, Kennedy/Jenks/Chilton (K/J/C). The Final Phase II Site Assessment report applies only to the investigation of discharges from the H1 tank. However, there are other potentially contaminated areas at the site which will be investigated at a later date. We have provided our general comments below. Our specific comments are included in an attachment.

The Phase II investigation methods included: taking grab samples of ground water from seven cone penetrometer test (CPT) locations and uncased soil borings; installation of eight additional ground water monitoring wells; periodic sampling of the Phase I and Phase II monitoring wells; and conducting a slug test on one of the monitoring wells to determine the hydraulic characteristics of one of the aquifer units.

We do not consider grab samples of ground water obtained from BAT probes, from uncased boreholes, or during air-rotary drilling to be a valid means of obtaining representative water quality information. Information obtained in this manner may be useful for determining appropriate locations for monitoring wells. However, data obtained in this manner can not be used to conclusively determine the extent of ground water contamination. During the October 26, 1988, meeting between McDonnell Douglass Astronautics Company (MDAC), K/J/C, Orange County Health Care Agency, and Regional Board staff, we discussed the need for additional ground water monitoring wells at the site. These additional wells are necessary to determine the extent of contamination in the shallow and intermediate zones and to monitor the effectiveness of any remedial actions. At that meeting, MDAC representatives agreed to install the additional monitoring wells. However, we have not received a work plan for the installation of these wells. Please submit the work plan by March 24, 1989.

Mr. Duane Jordan

Page 2

January 24, 1988

If you should have any questions, please call me or Tom Peltier of our Pollutant Investigation Section.

Sincerely,



Steven D. Overman, Acting Chief  
Pollutant Investigation Section

Attachment: Comments on Final Phase II Site Assessment

cc: Orange County Health Care Agency - Steve Harris ✓  
City of Huntington Beach Water Department -Ed Barkley

TDP/mdac2

RECEIVED  
JAN 31 1989

HEALTH CARE AGENCY  
Environmental Health

**SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD**

**COMMENTS ON  
FINAL PHASE II SITE ASSESSMENT  
McDONNELL DOUGLAS ASTRONAUTICS COMPANY  
5301 BOLSA AVENUE, HUNTINGTON BEACH**

**Section 5.2 Saturated Zone Investigations**

**Shallow saturated zone**

Temporary testing points were used to obtain samples of ground water from the shallow zone. During the unsaturated zone investigation, testing points were driven into the shallow saturated zone through the hollow stem augers. Grab samples of ground water were obtained from these temporary testing points and the information was used to evaluate the extent of contamination in the shallow zone. This is not a valid means of obtaining ground water samples to be used for evaluation of the extent of contamination.

**Intermediate Zone Investigation (45 Foot Sands)**

Cone penetrometer testing (CPT), combined with BAT water sampling was used to evaluate water quality in the intermediate and deeper zones. Ground water grab samples from the intermediate unit were also obtained during air-rotary drilling of monitoring wells completed in the deeper zone. These samples were used to evaluate the extent of contamination in the intermediate zone. Samples obtained in this manner are not valid for use in evaluating the extent of contamination.

**Gradient Determinations**

Ground water flow in the intermediate zone is depicted variously as flowing west-southwest in March 1988 and northwest in June 1988. Considerable variation in the slope of the water table is also indicated. During the CPT survey, a gradient determination was made by taking pore-pressure readings and using a hand level survey. This is not an acceptable means of determining gradient. The pore-pressure readings may be influenced by disturbance of the aquifer materials when the probe was forced into the formation. Also, hand level surveys are not accurate enough for making gradient determinations. We found no other reference to a survey of the well elevations in the Phase II report. According to the Phase I investigation report, the elevations of the Phase I monitoring wells were determined by surveying the north side of the Christy boxes. If this method was also used to determine the elevations of the Phase II monitoring wells,

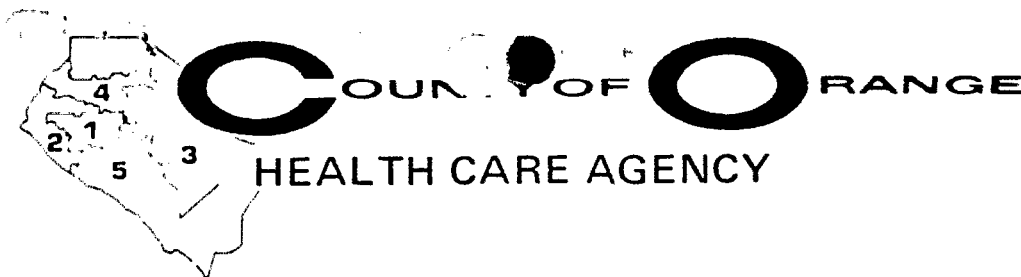
then all the monitoring wells on site should be re-surveyed to a permanent mark on the well casing.

### **Aquifer testing**

Hydraulic properties of the 45-foot sands were determined by performing a slug test on monitoring well MW-5D. The report implies that MW-5D fully penetrates the 45-foot sands, and that the test performed is representative of the hydraulic properties of this unit. However, this well only penetrates the upper member of the 45-foot sands. The stratigraphic interval referred to as the "45-foot sands" is defined as an upper silty sand layer that is laterally continuous, and one or more additional series of interbedded sands or silty sands and clays. According to the report, monitoring wells MW-5D, MW-6D, and CP-1A, are screened in the upper most silty sand layer because this member is more extensive and is likely to be a more significant water bearing zone. However, all of the boring logs for the deeper wells, and all of the CPT logs show a second sand or silty sand unit below the upper member of the 45-foot sands. There is no evidence that this unit is discontinuous or insignificant as a water bearing zone. It is inappropriate to apply the term "45-foot sands" to the screened intervals of the monitoring wells or to the aquifer test conducted on MW-5D. None of the on-site monitoring wells are screened in the lower member of the 45-foot sands. Therefore, the water quality and hydraulic properties of this unit have not been evaluated. It is not appropriate to propose remediation of the 45-foot sands until the lower member of the unit has also been investigated. Obviously, monitoring wells screened in this interval are necessary to evaluate the chemical quality and hydraulic properties of this unit. We believe that more extensive aquifer testing, including pump tests are necessary to adequately design a remediation system. Slug tests alone do not provide adequate and reliable information on the hydraulic properties of the aquifer.

### **Lab Analyses**

We found numerous discrepancies in the lab reports between the time samples were taken and the time they were analyzed. Several samples were reportedly analyzed prior to the date the sample was received by the lab. One sample was analyzed 25 days after the sample was taken. Please be aware that in the future we will not accept data unless the chain of custody forms and lab reports are in order.



9/29/87  
TOM URAM  
DIRECTOR

L. REX EHRLING, M.D.  
HEALTH OFFICER

1725 WEST 17TH STREET  
SANTA ANA, CA 92706

TELEPHONE: 714/834-7601

MAILING ADDRESS: P.O. BOX 355  
SANTA ANA, CA 92702

PUBLIC HEALTH  
ENVIRONMENTAL HEALTH

Orange County Health Care Agency  
P.O. Box 355  
Santa Ana, CA 92702

Contact Person: Robert E. Merryman, (714) 834-6760

FOR IMMEDIATE RELEASE

Santa Ana, September 29, 1987... Dr. L. Rex Ehling, County Health Officer, reported today that the Orange County Division of Environmental Health is taking steps to correct a potentially hazardous situation involving contaminated groundwater at an underground storage tank system in Huntington Beach.

In August 1986, eighteen (18) underground storage tanks were removed from a manufacturing facility located at 5301 Bolsa Avenue in Huntington Beach. County Environmental Health staff oversaw the removal operation and noted evidence of possible soil contamination at that time. The company was directed to conduct an investigation to determine the extent of contamination.

In May 1987, the Division of Environmental Health received and approved a site assessment plan submitted by the responsible party. An initial report, completed in August 1987, indicated extensive soil contamination and possible groundwater contamination at the facility.

This month, the Environmental Health Division received soil and groundwater laboratory results from the company. The laboratory results confirmed that soil at the site is extensively contaminated with several solvents. Groundwater sample results indicated the presence of high concentrations of freon 113, trichloroethylene (TCE), 1,1-dichloroethylene, 1,1,1-trichloroethane, 1,1-dichloroethane, methylene chloride, and toluene exceeding the Action Levels set by the State for drinking water. In addition, levels of acetone and chloroform have been detected in higher than normal concentrations in groundwater. All of these solvents are mild irritants but can be toxic if ingested in high concentrations. In addition, acetone and toluene are highly flammable.

(MORE)

Last week Environmental Health staff conducted an investigation to determine if any drinking water or irrigation wells located in the vicinity were adversely impacted. There are three city wells within a half mile of the site. To date, there is no evidence that the contamination has moved offsite and affected these wells.

The Santa Ana Regional Water Quality Control Board has been notified of the groundwater contamination. Both Environmental Health and the Regional Water Quality Control Board will continue to work with the company to mitigate the soil and groundwater contamination at this site.

# # #

This discharge was reported pursuant to requirements included in the Safe Drinking Water and Toxic Enforcement Act of 1986, Proposition 65, effective January 1, 1987.

# Solvents taint ground water beneath OC plant

## McDonnell Douglas site to be cleared

By Marla Cone  
The Register

HUNTINGTON BEACH — Ground water underneath McDonnell Douglas Corp. has been contaminated by nine chemical solvents that seeped from an underground tank storing hazardous waste, environmental officials said.

The pollution poses no immediate threat to public health because drinking-water supplies have not been contaminated, said Bob Merryman, Orange County's environmental health director.

■ **McCOLL:** Contaminated ground water discovered/18

But the aerospace company has been asked to initiate cleanup by January to stop the chemicals from spreading into three city water wells less than a half-mile away.

"It's not endangering the public immediately. Solvents move very slowly in the soil," Merryman said. "Hopefully, we can get it (cleanup) going before any migration."

The leak is one of the most serious discovered in Orange County because so many solvents in large concentrations were detected in the ground water, Merryman said.

All nine solvents were found in excessive concentrations, Merryman said. Seven of the chemicals, including two suspected of being cancer-causing agents, exceed the level considered safe for California drinking-water supplies. Most were detected at concentrations thousands of times greater than the safety level.

"These are very high concentrations, but the good news is that it hasn't moved off the company's property," Merryman said.

The pollutants seeped into the ground water, which is 20 feet below the surface, from a 400-gallon underground tank storing discarded cleaning solvents, said McDonnell Douglas spokesman Jeff Fister.

McDonnell Douglas reported the leak to county officials more than a year ago, after discovering it while removing underground tanks to comply with a new state law, Fister said. Last month, after analyzing water samples, county officials discovered that the pollutants had reached the water table.

Company officials have no idea how long the concrete tank, which was installed around 1962, was leaking, Fister said. The tank has no leak-detection monitors, which were not required at the time.

"It's what we assume is a slow leak, so it wasn't noticeable," Fister said.

McDonnell Douglas also has not determined yet how many gallons

Please see POLLUTION/1

Revised 10/5/87

# Groundwater Pollution Found at 2 County Sites

By DOUG BROWN, *Times Staff Writer*

Contaminated groundwater has been found at the McColl hazardous waste dump site in Fullerton and around an underground storage tank system at the McDonnell Douglas plant in Huntington Beach, the Environmental Health Department of the Orange County Health Care Agency announced Friday.

But the potentially hazardous contamination has not spread to nearby wells that provide drinking water to parts of Fullerton and Huntington Beach, Environmental Health Director Robert Merryman said.

"We will be conducting frequent monitoring of the contaminated areas, but this is not the kind of contamination that moves fast," Merryman said. "Still, we're going to have this contamination cleaned up as quickly as possible."

To prevent the contamination from spreading underground to wells providing drinking water, cleanup programs will be conducted at both sites, Merryman said.

He said that he does not know when the cleanup will begin and that Friday's simultaneous announcement was coincidental.

## Plan Due Oct. 15

A plan outlining what McDonnell Douglas will do to get rid of the underground contamination at its manufacturing plant at 5301 Bolsa Ave., Huntington Beach, will be submitted by Oct. 15, company spokesman Jeff Feister said Friday.

Merryman said he expects the McColl cleanup plan to be filed with Environmental Health by next January.

Environmental Health is the department that monitors toxic contaminations and coordinates cleanup plans, Merryman said.

This is the first time that contaminated groundwater has been found at the McColl site, Merryman said. But in previous tests, health officials said they had determined that soil at the dump, near the Los Coyotes Country Club, contains sulfuric acid, benzene and arsenic.

But the officials have said the dump still poses no immediate

health threat. Officials have determined that the hazards at McColl were created in the 1940s when oil companies used the site to dump aviation fuel wastes and oil-drilling muds.

The contaminated groundwater was detected by the Environmental Protection Agency, which Merryman said last spring drilled 41 bore holes 250 feet deep.

Laboratory tests established that the groundwater is contaminated with high concentrations of the solvents benzene, toluene, xylene, acetone and hexane.

## Could Be Toxic

"All of these solvents are mild irritants but can be toxic if ingested in high concentrations," Merryman said. "And acetone and toluene are highly flammable."

In 1985, a \$26.5-million federal Superfund project to excavate and haul the McColl waste to a Kern County disposal facility was blocked when residents near the disposal site successfully sued to have an environmental impact report carried out. The contaminated groundwater discovery was made as part of that EIR, which Merryman said will be completed next January.

In Huntington Beach, the potentially hazardous situation came to the attention of Environmental Health in August, 1986, when it's staff members, complying with state law, were overseeing the removal of 18 underground storage tanks from the grounds of the McDonnell Douglas plant, Merryman said.

The staff members noted that possible soil contamination had occurred. Merryman said subsequent testing found that the groundwater is contaminated with the solvents Freon, trichloroethylene, dichloroethylene, trichloroethane, dichloroethane, methylene chloride, toluene, acetone and chloroform.

"There is no evidence of serious contamination because drinking water has not been contaminated," McDonnell Douglas spokesman Feister said.



10/17/87  
The Register p. 1, 18  
Drury

# Ground water beneath McDonnell Douglas is tainted by solvents

By Marla Cone  
The Register

HUNTINGTON BEACH — Ground water underneath McDonnell Douglas Corp. has been contaminated by nine chemical solvents that seeped from an underground tank storing hazardous waste, environmental officials said.

The pollution poses no immediate threat to public health because drinking-water supplies have not been contaminated, said Bob Merryman, Orange County's environmental health director.

But the aerospace company has been asked to initiate cleanup by January to stop the chemicals from spreading into three city water wells less than a half-mile away.

"It's not endangering the public immediately. Solvents move very slowly in the soil," Merryman said. "Hopefully, we can get it (cleanup) going before any migration."

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All nine solvents were found in excessive concentrations, Merryman said. Seven of the chemicals, including two suspected of being cancer-causing agents, exceed the level considered safe for California

■ **McCOLL:** Contaminated ground water discovered/18

drinking-water supplies. Most were detected at concentrations thousands of times greater than the safety level.

"These are very high concentrations, but the good news is that it hasn't moved off the company's property," Merryman said.

The pollutants seeped into the ground water, which is 20 feet below the surface, from a 400-gallon underground tank storing discarded cleaning solvents, said McDonnell Douglas spokesman Jeff Fister.

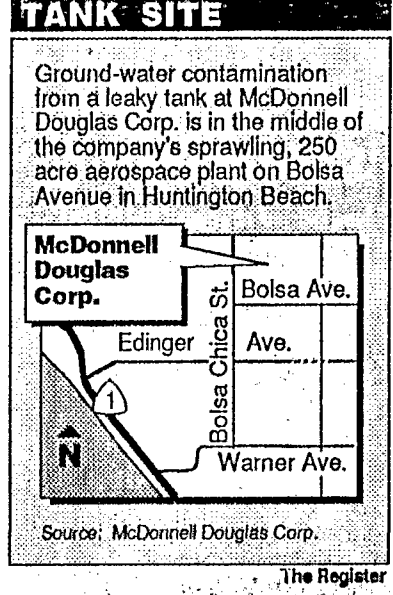
McDonnell Douglas reported the leak to county officials more than a year ago, after discovering it while removing underground tanks to comply with a new state law, Fister said. Last month, after analyzing water samples, county officials discovered that the pollutants had reached the water table.

Company officials have no idea how long the concrete tank, which was installed around 1962, was leaking, Fister said. The tank had no leak-detection monitors, which were not required at the time.

"It's what we assume was a slow leak, so it wasn't noticeable to us," Fister said.

McDonnell Douglas also has not determined yet how many gallons

Please see **POLLUTION/18**



## POLLUTION: Tank leaked nine solvents

FROM 1

spilled into the soil or how far the chemicals have spread. So far, no contamination has been found outside the perimeters of the Bolsa Avenue plant.

The leaky tank is one of more than 300 detected in Orange County since the Legislature passed a law in 1984 requiring inspections of underground fuel and chemical containers. About one-third of the leaks have resulted in ground-water pollution. Only one, at a Mobil Oil storage tank in Anaheim, has infiltrated drinking-water supplies.

The Santa Ana Regional Water Quality Control Board has requested that the company begin its cleanup by January. "We may

## Chemical contaminant

The nine chemicals found in water and Corp. in Huntington Beach are industrial, an immediate threat to health because in the drinking water supply. All, however, concentrations greater than the state deemed safe for drinking water. All of them, TCE, dichloroethane and chloroform, are cancer-causing agents.

Chemical	Amount
Freon 113	160,000
TCE*	12,000
DCE	7,400
Trichloroethane	35,000
Dichloroethane*	2,800
Methylene chloride	1.5 million
Toluene	600
Chloroform*	2,100
Acetone	3.5 million

\*Suspected carcinogen

Source: Orange County environmental health division

even be able to start remedial action before then," Fister said.

Most cleanups of major underground leaks — which usually involve pumping and treatment of ground water — take years and cost the responsible company millions of dollars.

"It's usually very costly and time-consuming," Merryman said.

The cost to McDonnell Douglas hasn't been calculated.

Three of the chemicals are suspected cancer-causing agents, while the others are toxic irritants, some of which are highly flammable.

One toxic solvent, methylene chloride, was detected in the ground water at a concentration of

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dies

**MCDONNELL DOUGLAS ASTRONAUTICS COMPANY**

5301 Bolsa Avenue, Huntington Beach, CA 92647 (714) 896-3311

D. R. Jordan  
A67-711

24 November 1987  
DRJ:87-276

gt

Mr. Steve Harris  
Orange County Health Care Agency  
Waste Management Section  
P.O. Box 355  
Santa Ana, CA 92702

Dear Steve:

Enclosed is a copy of the Underground Storage Tank Leak Response Plan as requested.

If there are questions contact the undersigned at 714-896-3848.



Duane R. Jordan  
Specialist - Environmental

DRJ/srb

Enclosure as noted above

**MCDONNELL DOUGLAS**  
  
**CORPORATION**

COUNTY OF ORANGE/HEALTH CARE AGENCY  
ENVIRONMENTAL HEALTH (714) 834-8020  
1725 WEST 17TH STREET, P.O. BOX 355  
SANTA ANA, CA 92702  
WASTE MANAGEMENT SECTION

UNDERGROUND STORAGE TANK LEAK RESPONSE PLAN

COMPANY NAME: MCDONNELL DOUGLAS ASTRONAUTICS CO.  
ADDRESS: 5301 Bolsa Avenue  
Huntington Beach, CA 92647  
TELEPHONE NO.: 714-896-3311

IF LEAK DETECTION ALARM IS ACTIVATED:

1. DETERMINE WHICH TANK/PIPELINE IS INVOLVED.
2. SHUT OFF PUMP OR DISCONTINUE OPERATION OF THE SYSTEM, IF NECESSARY.
3. CALL THE OWNER/RESPONSIBLE PERSON(S) IMMEDIATELY.

NAME: Paul Brandon TELEPHONE NO.: 714-896-4946 842-9151  
DAYTIME EVENING

NAME: Chuck McRae TELEPHONE NO.: 714-896-1409 847-6272  
DAYTIME EVENING

4. OWNER/RESPONSIBLE PERSON TO CONTACT THE LEAK RESPONSE UNIT/COMPANY.

NAME: Dick deRose TELEPHONE NO.: 800-992-4669

NAME: 24 hour answering service TELEPHONE NO.: 800-992-4669

5. INITIATE LEAK DETERMINATION AND CLEANUP PROCEDURES IMMEDIATELY.
6. CONTACT LOCAL AGENCIES WITHIN 24 HOURS (UNLESS THE MONITORING SYSTEM CAN BE REACTIVATED WITHIN 8 HOURS AND THE STRUCTURAL INTEGRITY OF THE SECONDARY CONTAINER IS NOT IMPAIRED).

ORANGE COUNTY HEALTH DEPARTMENT: - 834-8174

FIRE DEPARTMENT TELEPHONE NO.: 911

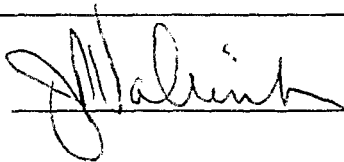
METHODS AND TYPE OF EQUIPMENT TO BE USED FOR REMOVING HAZARDOUS SUBSTANCE:

Outside vacuum trucks would be called in to empty the problem tank

American Environmental 714-826-6320

Disposal Control Services 714-983-0342

IT 213-518-4700

SIGNATURE: 

DATE: 23 Nov 87

A COPY OF THIS RESPONSE PLAN MUST REMAIN ON-SITE AT ALL TIMES  
KEEP ORIGINAL/SEND COPY TO ORANGE COUNTY HEALTH CARE AGENCY



DATE: 10/6/87

TO: Bob Merryman

DEPT/DIST: 3

FROM: Steve Harris

SUBJECT: McDonnell-Douglas 5301 Bolsa Ave., H.B. File # 86U-143

Underground tanks removed Aug. 19, 1986: (location by building #)

- \* 1000 ga waste solvent (Bldg 28)
- 60 ga gas (21)
- \* 220 ga waste solvent (22)
- \*\* 500 ga waste solvent (42)
- 60 ga gas (16)

\* sites currently being assessed.

\*\* badly contaminated site

U.S. Tanks removed Aug 25, 1986:

Qty.

- (11) 8,000 ga diesel (near cooling plant along Rancho Rd area)
- (1) 10,000 gal and water soluble coolant (45)
- (1) 5,000 ga gas (trailer #30)

U.S. Tanks removed Oct. 2, 1986:

1000 ga Waste solvent (28)

U.S. Tanks removed June 15, 1987

10,000 ga waste thinners

1200 ga waste oil



County of Orange

## MEMO

DATE: 10/6/87

TO: Bob Merryman

DEPT/DIST: 3

FROM: Steve Harris

SUBJECT: McDannell - Douglas continued

U.S. Tanks currently located at site. (Bldg. #)

5,000 ga diesel (28)

5,000 ga waste mild acid (46 S)

10,000 ga unleaded (44) (scheduled for removal)

Plans have been approved to install

10,000 ga gasoline (new service shop)

6,000 ga diesel

Site conditions:

- (▽)  
- Depth to groundwater 20-22 feet.
- ▽ gradient inconsistent to date.
- Safety (fire) survey has been completed and results indicate there is no immediate fire danger. Levels are very low - none detected at the monitoring points selected for the vapor survey.

Only lab results from the first phase of site assessment have been received to date. Report to follow soon.

mainly North  
To Scale

RANCHO ROAD

To be removed soon { H-7 ● Waste solvent plant 10,000 gal  
H-8 ● Waste oil 1200 gal

49A 49B

49

G-4

bus 10,000 gal

44

44A

43

39

38

Removed

H-1

30

31

41

Removed

45

H-11

45C

46N

45B

45A

45D

46S

High Waste tank 5,000 gal

H-9

Removed

G-3

SKYLAB ROAD

22A

21

22

G-1

Removed

16

H-3

Removed

11

12

10

14

13

Removed

Proposed  
4th well.

Monitoring well  
locations

22B

H-2

Removed

28

**MCDONNELL DOUGLAS**

*McDonnell Douglas Astronautics Company*

D. R. Jordan  
A67-711

17 March 1989  
DRJ:89-148

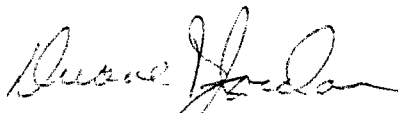
Mr. Bob Holmes  
Orange County Health Care Agency  
Environmental Health  
Waste Management Section  
P. O. Box 355  
Santa Ana, CA 92702

Dear Bob,

Enclosed is a signed copy for alternative number five Monitoring Procedure for the 5000 gallon underground diesel tank servicing a large standby generator.

Also enclosed is a copy of the March 10, 1989 leak test on the same tank system indicating that the tank system is liquid tight.

If there are further questions contact the undersigned at (714) 896-3848.



Duane R. Jordan  
Specialist-Environmental

DRJ/rv

Enclosure as noted above

cc: J. C. Keeney

ORANGE COUNTY TANK TESTING, INC.

March 13, 1989

Job Address: McDonnell Dougals Ast  
5301 Bolsa  
Huntington Beach, CA

American Enviromental  
10960 Boatman Way  
Stanton, CA 90680

Attn: Steve Howell

Dear Mr. Howell:

On March 10, 1989 we Petro-tite tested one underground tank system at the above location.

The 5,000 gallon Diesel tank system had a leak rate of  $\pm .001$  gallons per hour.

The above mentioned underground tank system leak rate is within the N.F.P.A. criteria of  $\pm .050$  gallons per hour. Therefore, this tank system can be considered liquid tight at this time.

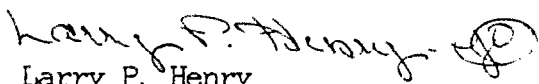
The criteria established of  $\pm .050$  gallons per hour is a mathematical calculation based on actual liquid volume change and temperature change and is not intended as permission of a leak.

We assume no responsibility for product leakage. Our responsibility extends only to the testing of the tank or product lines as tight or not tight as of the date tested, within the accuracy tollerance of the Petro-tite test system. Also remember that Tank Testing does not take the place of daily tank sticking.

We appreciate the opportunity to service your tank testing needs and look forward to working with you in the future. We will send you a written notice 30 days prior to next year test date.

All test results are attached.

Sincerely,

  
Larry P. Henry  
Orange County Tank Testing, Inc.

LPH/jo  
enclosure



# Data Chart for Tank System Tightness Test

**petro title**  
TANK TESTER

PLEASE PRINT

1. OWNER	Property <input type="checkbox"/> Tank(s) <input type="checkbox"/> McDonnell Dougals Ast. 5301 Bolsa, Huntington Beach, CA 90680 - Steve Howell - (714) 826-6320 <small>Name Address Representative Telephone</small> McDonnell Dougals Ast. 5301 Bolsa, Huntington Beach, CA 90680 - Steve Howell - (714) 826-6320 <small>Name Address Representative Telephone</small>																					
2. OPERATOR	McDonnell Douglas 5301 Bolsa, Huntington Beach, CA 92647 <small>Name Address Telephone</small>																					
3. REASON FOR TEST (Explain Fully)																						
4. WHO REQUESTED TEST AND WHEN	Steve Howell Supervisor American Environmental <small>Name Title Company or Affiliation Date</small> 10960 Boatman Way, Stanton, CA 90680 (714) 826-6320 <small>Address Telephone</small>																					
5. WHO IS PAYING FOR THIS TEST?	American Environmental Steve Howell Supervisor (714) 826-6320 <small>Company, Agency or Individual Person Authorizing Title Date</small> 10960 Boatman Way, Stanton, CA 90680 <small>Billing Address City State Zip</small> Attention of: Order No. Other Instructions																					
6. TANK(S) INVOLVED	Identify by Direction	Capacity	Brand/Supplier	Grade	Approx. Age	Steel Fiberglass																
	#1	51000		DIESEL	6+																	
7. INSTALLATION DATA	Location	Cover	Fills	Vents	Siphones	Pumps																
	#1 SOUTH SIDE BOLSA		4"	2"	N/O																	
	North inside driveway, Rear of station, etc.	Concrete, Black Top, Earth, etc.	Size, Titefill make, Drop tubes, Remote Fills	Size, Manifolded	Which tanks?	Customer Remote Make if known																
8. UNDERGROUND WATER	Depth to the Water table 10'					Is the water over the tank? <input type="checkbox"/> Yes <input type="checkbox"/> No																
9. FILL-UP ARRANGEMENTS	Tanks to be filled _____ hr _____ Date Arranged by _____ <small>Name Telephone</small> Extra product to "top off" and run TSTT. How and who to provide? Consider NO Lead Terminal or other contact for notice or inquiry _____ <small>Company Name Telephone</small>																					
10. CONTRACTOR, MECHANICS, any other contractor involved	O.C.T.T.																					
11. OTHER INFORMATION OR REMARKS	SYSTEMS TEST, REMOVED LINES AT DAY TANK Additional information on any items above. Officials or others to be advised when testing is in progress or completed. Visitors or observers present during test etc.																					
12. TEST RESULTS	Tests were made on the above tank systems in accordance with test procedures prescribed for <b>petro title</b> as detailed on attached test charts with results as follows: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Tank Identification</td> <td>Tight</td> <td>Leakage Indicated</td> <td>Date Tested</td> </tr> <tr> <td>#1</td> <td>YES</td> <td>0.001</td> <td>3-10-89</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>						Tank Identification	Tight	Leakage Indicated	Date Tested	#1	YES	0.001	3-10-89								
Tank Identification	Tight	Leakage Indicated	Date Tested																			
#1	YES	0.001	3-10-89																			
13. CERTIFICATION	This is to certify that these tank systems were tested on the date(s) shown. Those indicated as "Tight" meet the criteria established by the National Fire Protection Association Pamphlet 329. <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="width: 45%;">                     Date 1551                      Serial No. of Thermal Sensor                 </div> <div style="width: 50%; text-align: center;">                       ORANGE COUNTY TANK TESTING INC.  <small>Testing Contractor or Company By Signature</small>                      225 N. Loara St. - Anaheim, Ca. 92801  <small>Address</small> </div> </div>																					

Name of Supplier, Owner or Dealer

Address, No. and Street

City

State

Date of Test

## 15. TANK TO TEST

#1 SOUTH SIDE

Identify by position

DIESEL

Brand and Grade

## 15a. BRIEF DIAGRAM OF TANK FIELD

EOLSET

## 16. CAPACITY

Nominal Capacity

Gallons

By most accurate capacity chart available

Gallons

From

Station Chart

Tank Manufacturer's Chart

Company Engineering Data

Charts supplied with

Other MAIN, MAIN

## 17. FILL-UP FOR TEST

Stick Water Bottom before Fill-up

0

to 14"

0

Gallons

95

Tank Diameter

Inventory

Gallons

Total Gallons as Reading

5,122

+8

5,130

Transfer total to line 25a

## 18. SPECIAL CONDITIONS AND PROCEDURES TO TEST THIS TANK

☐ Water in tank☐ Lines being tested with LVLT☐ High water table in tank excavation

See manual sections applicable. Check below and record procedure in log (27).

Use maximum allowable test pressure for all tests. Four pound rule does not apply to double-walled tanks.

Complete section below:

1. Is four pound rule required?

Yes ☒ No ☐

2. Height to 12" mark from bottom of tank

11 in.

3. Pressure at bottom of tank

P.S.I.

4. Pressure at top of tank

P.S.I.

Depth of burial

140 in.

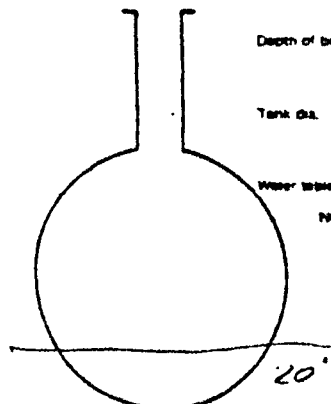
Tank dia.

96 in.

Water table

120 in.

NOTES:



The above calculations are to be used for dry soil conditions to establish a positive pressure advantage, or when using the four pound rule to compensate for the presence of subsurface water in the tank area.

Refer to N.E.P.A. 3C Sections 2-3.2.4 and 2-7.2 and the tank manufacturer regarding allowable system test pressures.

## 19. TANK MEASUREMENTS FOR TSTT ASSEMBLY

Bottom of tank to grade\* 140 in.

Add 30" for TTT probe assembly 30 in.

Total tubing to assembly - approximate 170 in.

## 20. EXTENSION HOSE SETTING

Tank top to grade\* 44 in.

Extend hose on suction tube 6" or more 54 in.

below tank top

\*If P.H. pipe extends above grade, use top of PH

22. Thermal-Sensor reading after circulation 149.24 deg

67.68 °F

23. Digits per °F in range of expected change 326 digits

## COEFFICIENT OF EXPANSION (Complete after circulation)

24a. Corrected A.P.I. Gravity

Observed A.P.I. Gravity

Hydrometer employed

Observed Sample Temperature °F

Corrected A.P.I. Gravity

@ 60°F, From Table A

Coefficient of Expansion for involved Product

From Table B

Transfer COE to Line 25b

## 21. VAPOR RECOVERY SYSTEM

☐ Stage I ☐ Stage II

## 24b. COEFFICIENT OF EXPANSION RECIPROCAL METHOD

9.55

Type of Product DIESEL

Hydrometer Employed #4 H

Temperature in Tank After Circulation 67.6 °F

Temperature of Sample 67 °F

Difference (+/-) -1 °F

Observed A.P.I. Gravity 34.5

Reciprocal 2171 Page 1 38

5,130 . 2171 . 2.3629663

Total quantity in full tank (16 or 17) Reciprocal

Volume change in this tank per °F

Transfer to Line 25a.

## 24c. FOR TESTING WITH WATER

See Table C &amp; D

Water Temperature after Circulation

Table C

Coefficient of Water

Table D

Added Surfactant? ☐ Yes ☐ No Transfer COE to Line 25c

25. (a) 5,130 x (b) = (c) gallons

Total quantity in full tank (16 or 17)

Coefficient of expansion for involved product

Volume change in this tank per °F

26. (a) 7.3629663

Volume change per °F (25 or 24b)

Digits per °F in test Range (23)

Volume change per digit

Compute to 4 decimal places

This is test

Transfer to

10072493-3 10072

26	LOG OF TEST PROCEDURES			30.	HYDROSTATIC PRESSURE CONTROL		31.	VOLUME MEASUREMENTS (V) RECORD TO 0.01 GAL.		34	TEMPERATURE COMPENSATION USE FACTOR (a):		38.	NET VOLUME CHANGES EACH READING		39.	ACCUMULATED CHANGE	
27.	28.	Record details of setting up and running test. (Use full length of line if needed.)		29.	Standpipe Level in Inches		32.	Product in Graduate		35.	36.	37.	Temperature Adjustment	At High Level record Total End Deflection  At Low Level compute Change per hour (RFA criteria)				
DATE	TIME (24 hr)			Reading No.	Beginning of Reading	Level to which Restored	Before Reading	After Reading	Product Replaced (-) Product Recovered (+)	Thermal Sensor Reading	Change Higher - Lower - (c)	Computation (c) - (a) = Expansion + Contraction -	Volume Minus Expansion (-) or Contraction (+) #33(V) - #37(T)					
8:00		ARRIVED ON JOB																
8:55		START PUMP							#1 5,000									
9:35		TOOK #1 SAMPLE							DIESEL									
9:40		TOOK #2 SAMPLE																
9:55		READ API SAMPLE																
										14								
9:45		START HIGH TEST		0	—	42				929								
10:00				1	42.1	42	535	542	+0.007	931	+2	+0.014	-0.007					
10:15				2	42.1	42	540	554	+0.014	940	+9	+0.065	-0.051					
10:30				3	42.1	42	551	564	+0.013	947	+7	+0.050	-0.037					
10:45				4	42.2	42	561	581	+0.020	953	+6	+0.043	-0.023					
11:00				5	42.2	42	578	598	+0.020	960	+7	+0.050	-0.030					
11:15				6	42.2	42	594	617	+0.023	965	+5	+0.036	-0.013					
11:30				7	42.2	42	614	638	+0.024	973	+8	+0.058	-0.034					
11:45				8	42.2	42	634	655	+0.021	977	+4	+0.029	-0.008					
11:45		LOW TEST		0	42	12				978								
12:00				0	12.5	12	188	222	+0.034	982	+4	+0.029	+0.005					
12:15				0	12.7	12	220	262	+0.042	992	+10	+0.072	-0.030					
12:15				0	12	12				994								
12:15				1	12.1	12	260	272	+0.012	994	+0	+0.000	+0.012					
12:20				2	12.1	12	270	284	+0.014	995	+1	+0.007	+0.007					
12:25				3	12.1	12	282	300	+0.018	997	+2	+0.014	+0.004					
12:30				4	12.1	12	298	315	+0.017	999	+2	+0.014	+0.003					
12:35				5	12.1	12	312	332	+0.020	003	+4	+0.029	-0.009					
12:40				6	12.1	12	135	151	+0.016	005	+2	+0.014	+0.002					
12:45				7	12.1	12	150	166	+0.016	008	+3	+0.022	-0.004					
12:50				8	12.1	12	165	177	+0.012	011	+3	+0.022	-0.010					
12:55				1	12.1	12	175	189	+0.014	013	+2	+0.014	+0.000					

26	LOG OF TEST PROCEDURES	30. HYDROSTATIC PRESSURE CONTROL	31. VOLUME MEASUREMENTS IN RECORD TO 301 GAL	34 TEMPERATURE COMPENSATION USE FACTOR (a)	38. NET VOLUME CHANGES EACH READING	39. ACCUMULATED CHANGE					
27	28. Record details of setting up and running test. (Use full length of line if needed)	29. Reading in.	32. Pressure in Gage	35. Thermal Sensor Reading	36. Change Higher + Lower - (c)	37. Compensation Expansion + Contraction - (d) = (a) - (b) - (c)	Temperature Adjustment Volume minus Expansion (-) or Contraction (+) #331V - #371V	At High Level record Total Test Selection At Low Level compute Change per hour (BPM criteria)			
1:00		10	12.1 12	189	203	4.014	0.15	+2	+0.014	+0.000	
1:05		11	12.1 12	201	212	+0.011	0.17	+2	+0.014	-0.003	
1:10		12	12.1 12	211	227	+0.016	0.18	+1	+0.007	+0.001	
1:15		17	12.1 12	225	232	+0.007	0.18	+0	+0.000	+0.007	
1:20		14	12.1 12	230	241	+0.011	0.19	+1	+0.007	+0.004	
1:25		15	12.1 12	240	251	+0.011	0.21	+2	+0.014	+0.003	
1:30		16	12.1 12	250	265	+0.015	0.24	+3	+0.022	-0.007	
1:35		17	12.1 12	265	271	+0.006	0.24	+0	+0.000	+0.000	
1:40		18	12.1 12	271	282	+0.011	0.25	+1	+0.007	+0.004	
1:45		19	12.1 12	280	296	+0.016	0.28	+3	+0.022	-0.006	
1:50		20	12.1 12	294	308	+0.014	0.30	+2	+0.014	+0.000	
1:55		21	12.1 12	305	317	+0.012	0.32	+2	+0.014	-0.002	
2:00		22	12.1 12	314	320	+0.006	0.34	+2	+0.014	-0.008	
2:05		23	12.1 12	320	334	+0.014	0.37	+3	+0.022	-0.008	
2:10		24	12.1 12	334	345	+0.011	0.38	+1	+0.007	+0.004	
SYSTEM TIGHT AT							+0.002		+0.001		

# AMERICAN

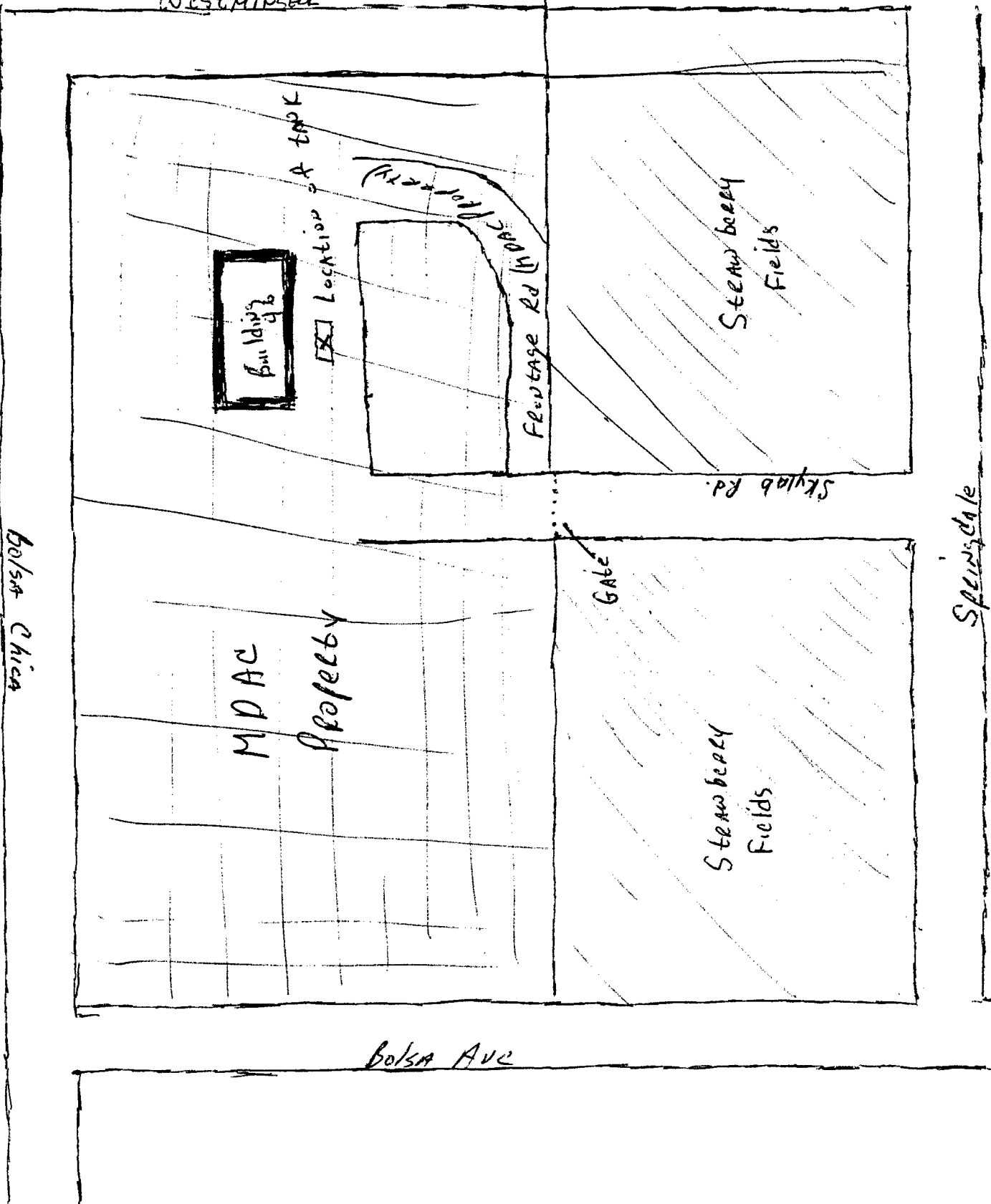
ENVIRONMENTAL MANAGEMENT CORP.

10960 Boatman Way, Stanton, California 90680 / (714) 826-6320

LOCATION OF TANK  
NOT TO SCALE

Pg 30  
Thomas  
Guide  
E-2

Westminster



1062X/p51

**MCDONNELL DOUGLAS**

*McDonnell Douglas Astronautics Company*

D. R. Jordan  
A3-711, M/S 49-2

11 September 1987  
DRJ:87-231

Mr. Steve Harris  
County of Orange Health Care Agency  
Environmental Health, Waste Management  
P.O. Box 355  
Santa Ana, CA 92702

Dear Steve,

Attached is a copy of the Organic Vapor Concentration Monitoring report you requested at our meeting on 10 September 1987.

Sincerely,



Duane R. Jordan  
Specialist - Environmental

DRJ/srb

Attachment as noted above

## Kennedy/Jenks/Chilton

17310 Red Hill Avenue, Suite 220  
Irvine, California 92714  
714-261-1577

28 August 1987

Mr. Duane Jordan  
Environmental Specialist  
McDonnell Douglas Astronautics Company  
5301 Bolsa Avenue (Building 49)  
Huntington Beach, California 92647

Subject: Organic Vapor Concentration Monitoring  
K/J/C 866464.00

Dear Mr. Jordan:

In accordance with your verbal request at our meeting on 7 August 1987, Kennedy/Jenks/Chilton conducted the subject monitoring on 12 August and 19 August 1987. The purpose of this monitoring was to test for the presence of potentially explosive concentrations of volatile organic compounds (VOCs) in air within confined spaces and in soil gas near the former H-1 underground tank location.

The instruments used to monitor soils and confined spaces in and adjacent to Building 41 were a Foxboro Portable Organic Vapor Analyzer (FID) Model OVA-128 (calibrated to methane) with an organic vapor detection range of 0.1 to 1,000 parts per million by volume in air (ppmv), and a GasTech NP-204 combustible gas indicator (CGI) with a detection range of 0 to 100 percent gas by volume in air (calibrated to methane). Confined space locations monitored on 12 August were: (1) three separate points beneath the floor slab of Building 41 (shown in Figure 1); (2) the electrical panel adjacent to structural column J-64 inside of Building 41; (3) the underground telephone and electrical vaults immediately north of Building 41; and (4) the electrical switching cabinets in the chain-link-fenced enclosure at the southwest corner of Building 42. Shallow soil gas organic vapor concentrations were monitored on 19 August 1987 at the three locations shown on Figure 2.

Access to points beneath Building 41 was achieved using a 7/8-inch-diameter concrete drill to penetrate the four- to five-inch-thick concrete floor slab. Drill holes were advanced so as to just penetrate the bottom of the concrete and the top of the underlying gravel base course. Initial monitoring measurements were taken at the time of drill hole completion by inserting the instrument probes individually into the hole, and sealing the annular space between the hole and the probe at the top with duct tape. The holes were allowed to remain undisturbed for a period of one hour. Final monitoring measurements were then taken, and the holes were sealed with a commercially available epoxy sealant formulated for concrete bonding. The results of these measurements, shown on Table 1 (attached), indicated the presence of sub-slab organic vapor concentrations (reported as methane) of up to 52 ppmv.

Mr. Duane Jordan  
McDonnell Douglas Astronautics Corporation  
K/J/C 866464.00  
28 August 1987  
Page 2

Stabilized OVA-128 readings (i.e., after the initial "jump" of the indicator needle, or "peak reading") were from 8 to 20 ppmv for test holes TH-1 through TH-3. No measurable combustible gas levels were detected using the CGI.

Monitoring of organic vapor concentrations in the utility vaults immediately north of Building 41 was accomplished by removing the upper manhole covers and then slightly raising the lower covers and inserting the OVA-128 and CGI probes to about three feet below ground surface. OVA-128 measurements in the telephone and electrical vaults, the location of which are shown on Figure 1, were 50 to 70 ppmv and 1.4 ppmv, respectively. No measurable combustible gas levels were detected in either vault using the CGI.

Three electrical panels inside of Building 41 and five external electrical switching cabinets at the southwest corner of Building 42 were monitored by cracking open the panel or cabinet doors and inserting the instrument probes. All measurements taken from these electrical housings indicated organic vapor concentration at 3 ppmv or less. Ambient air background OVA-128 readings ranged from 1 to 2 ppmv. No measurable combustible gas levels were detected in any of the housings evaluated using the CGI.

Organic vapor concentrations in shallow soil gas were measured at three locations immediately south of Building 41. At each location, a clean 7/8-inch-diameter steel pipe with end plug was driven into the ground to a depth of about three feet and then retracted about twelve inches. Upon retraction the end plug was dislodged from the lower end of the pipe, opening the pipe end to the twelve inches of exposed hole. Initial monitoring measurements were taken immediately, by inserting the instrument probes individually into the top of the pipe, and sealing the annular space between the pipe wall and the probe. The top of the pipe was then covered with plastic sheeting and duct tape, and allowed to remain undisturbed for a period of one hour. A final monitoring measurement was then taken and the pipes removed from the ground. Holes were backfilled with native soil. The results of these measurements, as shown on Table 1, indicated organic vapor concentrations of up to 16 ppmv. Stabilized OVA-128 readings ranged from 3.6 to 4.6 ppmv with background (ambient) air concentration ranging from 2.1 to 2.5 ppmv. It should be noted that organic vapor concentrations detected in these shallow soil gas probes as well as in the sub-slab base course beneath Building 41, may be in part the result of organic gases in the subsurface which are produced through the decomposition of natural organic materials.

The lower explosive limit (LEL) of a combustible gas is the smallest quantity of that gas which, when mixed with a given quantity of air, will support a self-propagating flame. Therefore, VOCs with low LEL values are of the



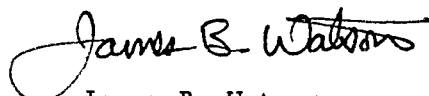
Mr. Duane Jordan  
McDonnell Douglas Astronautics Corporation  
K/J/C 866464.00  
28 August 1987  
Page 3

greatest concern when evaluating potential explosion hazards. As shown in Table 2, the VOCs detected in soils adjacent to Building 41 with the lowest LEL values are toluene (1.27 percent in air, or 12,700 ppmv); isopropyl alcohol (2.3 percent in air, or 23,000 ppmv); and acetone (2.6 percent in air, or 26,000 ppmv). The highest organic vapor concentrations detected during the subject confined space monitoring were two to three orders of magnitude below these LELs, even when the lower OVA response factors for acetone and isopropyl alcohol are considered. On the basis of historic site conditions (i.e., assumed residence time of the VOCs in soil) and the foregoing monitoring results, potentially explosive concentrations of VOCs do not appear to be accumulating in the confined spaces or soils tested during the subject monitoring program.

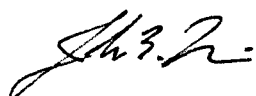
We appreciate having had the opportunity to provide these services to you and look forward to continuing the site investigation currently underway. Please contact us if you have any questions or need additional information.

Very truly yours,

KENNEDY/JENKS/CHILTON



James B. Watson  
Program Manager



John E. Norris  
Site Assessment Manager

JBW/JEN:djg

Attachments

cc: Mr. Dan Summers, MDC, St. Louis, Missouri



Scale in Feet

ELECTRICAL  
VAULT

TELEPHONE  
VAULT

MW-4

ROOM 104  
MECHANICAL & ELECTRICAL EQUIP

TH-1

ROOM 106  
HYDRAULICS CLEAN ROOM

TH-2

TH-3

TEST  
CELL  
NO. 3

BUILDING 41

**LEGEND :**



MW-4 Groundwater Monitoring Well



TH-1 Vapor Test Hole

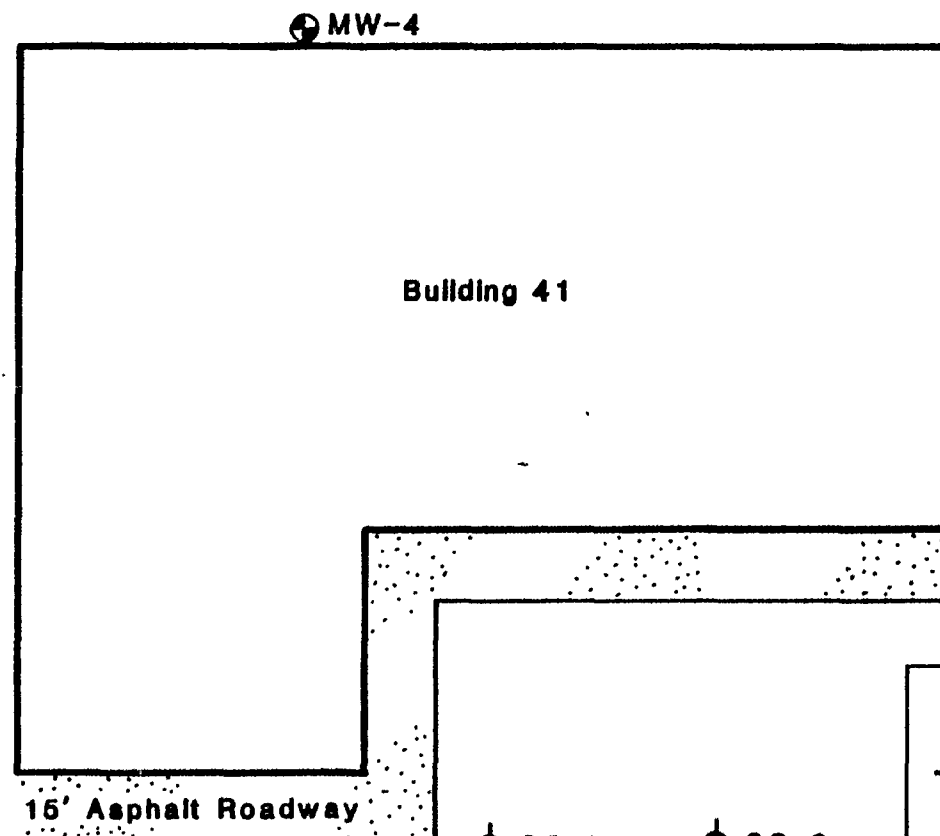
Kennedy/Jenks/Chilton

McDonnell Douglas Astronautics Company

**Locations of Test Holes  
in Building 41**

August 1987  
K/J/C 866464.00

Figure 1



# **LEGEND**

- SG-1 Soil Gas Test Hole
- MW-4 Groundwater Monitoring Well

Kennedy/Jenks/Chilton  
McDonnell Douglas  
Astronautics Company

**Location of Soil Gas Test Holes**

August 1987  
K/J/C 866464.00

**Figure 2**

TABLE 1

BUILDING 41 ORGANIC VAPOR MONITORING RESULTS

TEST HOLE NO.	MONITORING DATE	THICKNESS OF CONCRETE FLOOR SLAB (INCHES)	DEPTH OF HOLE (INCHES)	INITIAL MONITORING				FINAL MEASUREMENT			
				TIME	COMBUSTIBLE GAS INDICATOR (% LEL)	OVA <sup>2</sup> (ppmv)	COMMENTS	TIME	COMBUSTIBLE GAS INDICATOR (% LEL)	OVA (ppmv)	COMMENTS
TH-1	8/12/87	4.5	5.0	10:15	ND <sup>3</sup>	20	2.4 ppmv bkg <sup>4</sup>	11:15	ND	12	3.0 ppmv bkg 52 ppmv peak measurement <sup>5</sup>
TH-2	8/12/87	4.7	5.2	10:50	ND	15	3.0 ppmv bkg 20 ppmv peak measurement	11:50	ND	8.0	2.0 ppmv bkg 13 ppmv peak measurement
TH-3	8/12/87	5.1	5.3	11:00	ND	15	3.0 ppmv bkg 27 ppmv peak measurement	12:00	ND	10	1.4 ppmv bkg 14 ppmv peak measurement
SG-1	8/19/87	N/A <sup>6</sup>	36	15:45	ND	ND	2.1 ppmv bkg	16:45	ND	3.6	2.5 ppmv bkg 4.5 ppmv peak measurement
SG-2	8/19/87	N/A	36	16:00	ND	4.2	2.4 ppmv bkg 15 ppmv peak measurement	17:00	ND	4.6	2.5 ppmv bkg 16 ppmv peak measurement
SG-3	8/19/87	N/A	36	16:45	ND	3.8	2.4 ppmv bkg 12 ppmv peak measurement	17:45	ND	4.4	2.4 ppmv bkg 5.0 ppmv peak measurement

<sup>1</sup> Percent Lower Exposure Limit detected (Instrument calibrated using methane as the reference standard)

<sup>2</sup> Foxboro OVA-128 (organic vapor analyzer)

<sup>3</sup> None detected

<sup>4</sup> Background measurement detected by OVA-128

<sup>5</sup> Peak measurement detected by OVA-128

<sup>6</sup> Not Applicable

TABLE 2

IGNITABILITY CHARACTERISTICS OF SELECTED VOLATILE ORGANIC COMPOUNDS

CHEMICAL	OVA RELATIVE RESPONSE (%) METHANE=100	FLASH POINT OPEN CUP/ CLOSED CUP (OF)	LEL <sup>2</sup> (%)	UEL <sup>3</sup> (%)
Acetone	60	4/0	2.6	12.8
Isopropyl Alcohol (IPA)	65	65/53	2.3	12.7
1,1,1-Trichloroethane	NA	None	7	16
Toluene	120	55/40	1.27	7
Freon 113	NA	None	None	None
Methylene Chloride	NA	None	12	19
1,1-Dichloroethylene	NA	0/NA	7.3	16

<sup>1</sup> Not Available

<sup>2</sup> Lower Explosive Limit

<sup>3</sup> Upper Explosive Limit

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SANTA ANA REGION  
6809 INDIANA AVENUE, SUITE 200  
RIVERSIDE, CALIFORNIA 92506  
PHONE: (714) 782-4130



October 15, 1987

Environmental Protection Agency - Permits and Pretreatment Section (W-5-1)  
U. S. Army District, Los Angeles, Corps of Engineers - Permits Section  
NOAA, National Marine Fisheries Service  
U. S. Fish and Wildlife Service  
State Water Resources Control Board, Ted Cobb, Office of the Chief Counsel  
State Water Resources Control Board, Archie Matthews, Division of Water Quality  
State Department of Water Resources  
State Department of Fish and Game - Marine Resources Region  
State Department of Health Services - Santa Ana  
State Coastal Zone Conservation Commission, South Coast Region  
Orange County Environmental Management Agency/Regulation,  
Attention: Assistant Director  
Orange County Health Department  
Orange County Water District  
City of Huntington Beach  
City of Seal Beach

REVISED WASTE DISCHARGE REQUIREMENTS FOR MC DONNELL DOUGLAS ASTRONAUTICS  
COMPANY, CONSTRUCTION DEWATERING, ORDER NO. 87-134, NPDES NO. CA 0107115

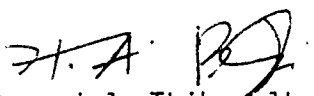
Gentlemen:

A copy of tentative Order No. 87-134, NPDES No. CA 0107115, was mailed to you on September 28, 1987. However, recent investigations in the general vicinity of the site have indicated the presence of chlorinated hydrocarbon solvents in the soil and ground water. Therefore, the tentative order has been revised to include discharge limitations on certain solvents. A copy of the revised order is enclosed for your review and comments.

These requirements are scheduled for consideration at the Board's November 13, 1987, meeting. Your comments are requested to be available prior to October 30, 1987.

If there are any questions, please contact Michael Adackapara of our Regulations Section.

Sincerely,

*for*   
Gerard J. Thibeault  
Supervising Engineer

Enclosure: Revised Tentative Order No. 87-134

MJA:pk

California Regional Water Quality Control Board  
Santa Ana Region

November 13, 1987

ITEM:

SUBJECT: Renewal of the NPDES Permit No. CA 0107115 for McDonnell Douglas Astronautics Company, Huntington Beach, Orange County, Construction Dewatering, Order No. 87-134.

DISCUSSION:

McDonnell Douglas Astronautics Company discharges an undetermined amount of construction dewatering wastes resulting from the construction of a concrete column in the basement of Building No. 28. The dewatering wastes are being discharged to Bolsa Chica Channel, a tributary to Huntington Harbour. This discharge is regulated by Order No. 82-203, NPDES No. CA 0107115. Order No. 82-203 expired on September 1, 1987. The proposed order will renew the waste discharge requirements for the construction dewatering project.

The beneficial uses of Huntington Harbour include water contact and non-contact recreation, ocean commercial and nonfreshwater sport fishing, wildlife habitat, marine habitat, and navigation.

Recent investigations at the site have indicated the presence of chlorinated hydrocarbon solvents in the soil and ground water. The revised permit contains effluent limits for chlorinated hydrocarbons, toluene, total sulfides, suspended solids, residual chlorine, and oil and grease. The turbidity and dissolved oxygen limits are being included for the receiving water. These proposed limitations are based on the best professional judgment for the protection of the beneficial uses of the receiving waters and are consistent with the requirements for similar discharges. The residual chlorine limitation has been established in case disinfection or sulfide treatment with chlorine is necessary. The proposed chlorine residual limit is necessary for the protection of aquatic life.

The proposed requirements should be adequate to protect the beneficial uses of the waters of the area.

RECOMMENDATION:

Adopt Order No. 87-134, NPDES No. CA 0107115, as presented.

Comments were solicited from the following agencies:

Environmental Protection Agency - Permits and Pretreatment Section (W-5-1)  
U. S. Army District, Los Angeles, Corps of Engineers - Permits Section  
NOAA, National Marine Fisheries Service  
U. S. Fish and Wildlife Service  
State Water Resources Control Board - Ted Cobb, Office of the Chief Counsel  
State Water Resources Control Board - Archie Matthews, Division of Water Quality  
State Department of Water Resources  
State Department of Fish and Game - Marine Resources Region  
State Department of Health Services - Santa Ana  
State Coastal Zone Conservation Commission, South Coast Region  
Orange County Environmental Management Agency/Regulation,  
Attention: Assistant Director  
Orange County Health Department  
Orange County Water District  
City of Huntington Beach  
City of Seal Beach

California Regional Water Quality Control Board  
Santa Ana Region

ORDER NO. 87-134

NPDES No. CA 0107115

Waste Discharge Requirements  
for  
McDonnell Douglas Astronautics Company  
Construction Dewatering  
Orange County

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Board), finds that:

1. McDonnell Douglas Astronautics Company (hereinafter discharger) discharges an undetermined amount of dewatering wastes resulting from the construction of a concrete column in the basement of its Building No. 28 at its Huntington Beach facilities under requirements contained in Order No. 82-203 (NPDES No. CA 0107115). Order No. 82-203 expired on September 1, 1987.
2. On July 2, 1987, the discharger submitted a completed application for renewal of the NPDES permit.
3. Dewatering wastes are being discharged to Bolsa Chica Channel, a tributary to Huntington Harbour. The facilities are located in a portion of Section 9, T5S, R11W, SBB&M, at 5301 Bolsa Avenue in the Huntington Beach area of Orange County. The location is shown on Attachment "A", which is made a part of this order. The location of the storm drain is shown on Attachment "B".
4. Recent investigations at the site have indicated the presence of chlorinated hydrocarbon solvents in the soil and ground water. This contamination is believed to be from leaking underground storage tanks. The locations of these underground storage tanks and the results of the investigations are shown on Attachment "C". Because of the proximity of the leaking underground storage tanks to the dewatering site, discharge limitations and monitoring requirements have been added in this permit for certain organic solvents in addition to other parameters.
5. The Board adopted a Water Quality Control Plan on May 13, 1983. The Plan contains water quality objectives and beneficial uses of waters in the Santa Ana Region.
6. The requirements contained in this order are necessary to implement the Water Quality Control Plan.
7. The discharge overlies the Santa Ana Pressure Ground Water Subbasin, the beneficial uses of which include:
  - a. Municipal and domestic supply,
  - b. Agricultural supply,
  - c. Industrial service supply, and
  - d. Industrial process supply.



8. The beneficial uses of Huntington Harbour include:
  - a. Water contact recreation,
  - b. Non-contact water recreation,
  - c. Ocean commercial and nonfreshwater sport fishing,
  - d. Wildlife habitat,
  - e. Marine habitat, and
  - f. Navigation.
9. The issuance of these waste discharge requirements is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21100 et seq.) in accordance with Section 13389 of the California Water Code.
10. Effluent limitations, national standards of performance, and toxic pretreatment effluent standards established pursuant to Section 208(b), 301, 302, 303(d), 304, 306, 307, and 403 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.
11. The Board has notified the discharger and other interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
12. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Federal Water Pollution Control Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. The discharge of wastes containing constituent concentrations in excess of the following limits is prohibited:

<u>Constituent</u>	<u>Concentration</u>
Suspended Solids	45 mg/l (ppm)
Total Sulfides	0.4 " "
Residual Chlorine (if chlorine disinfection is required)	0.1 " "
Trichloroethylene (TCE)	5.00 µg/l (ppb)
1,1,1-Trichloroethane (TCA)	10.00 " "
1,1-Dichloroethylene (DCE)	5.00 " "
Methylene Chloride	5.00 " "
Toluene	10.00 " "

2. The pH of the discharge shall be at all times within the range of 6.5 and 8.5 pH units.
3. There shall be no visible oil and grease in any discharge.
4. Neither the treatment nor the discharge of wastes shall cause a nuisance or pollution as defined in the California Water Code.
5. The discharge of wastes to property not owned or controlled by the discharger, except as outlined in this order, is prohibited.
6. The discharge of any substances in concentrations toxic to human, animal, plant, or aquatic life is prohibited.

B. Receiving Water Limitations

1. The discharge of waste shall not alter the color of or cause foam in the receiving waters.
2. The discharge of waste shall not cause the receiving waters to have an objectionable odor.
3. The discharge shall not cause the turbidity of the receiving water to be increased by more than twenty (20) percent.
4. When the discharge is to a watercourse in which there is continuous flow, the discharge shall not cause the dissolved oxygen concentrations in the receiving water to be depressed below 5.0 mg/l. When ambient concentrations are less than 5.0 mg/l, the discharge shall not cause a further depression.
5. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Board, as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act, or amendments thereto, the Board will revise and modify this order in accordance with such more stringent standards.

C. Provisions

1. The discharger shall comply with Monitoring and Reporting Program No. 87-134.
2. This order includes the enclosed "Standard Provisions and Reporting Requirements" with the exception of the following items: A.20, 21, 25, and 26; B.6. and 7; C.2, 5, 7, and 8.b.; D.9-11; and E.1-5, and 7.

3. Compliance with Discharge Specification A.1. shall be based on the results of each sample.
4. This order expires on November 1, 1992, and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.
5. This order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act or amendments thereto and shall become effective 10 days after the date of its adoption provided the Regional Administrator of the Environmental Protection Agency has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, James R. Bennett, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on November 13, 1987.

---

JAMES R. BENNETT  
Executive Officer

California Regional Water Quality Control Board  
Santa Ana Region

Monitoring and Reporting Program No. 87-13  
NPDES No. CA 0107115

for  
McDonnell Douglas Astronautics Company  
Construction Dewatering  
Orange County

A. Effluent Water Monitoring

1. Before initiating the discharge, a water sample from the dewatering site shall be analyzed for the volatile organics portion of the EPA Priority Pollutants (list attached). If the levels of any of the constituents exceed the discharge limits in this permit, the Regional Board should be contacted immediately to determine a further course of action. Dewatering may be initiated if the water is not contaminated.
2. A sampling station shall be established for each point of discharge and shall be located where representative samples of that effluent can be obtained. The following shall constitute the effluent monitoring program:

Constituents	Units	Type of Sample	Minimum Frequency of Analysis
Flow	gallons	Estimate	Daily
Total Sulfides	mg/l (ppm)	Grab	Weekly
Suspended Solids	" "	"	"
Chlorine Residual	" "	"	"
Trichloroethylene (TCE)	µg/l (ppb)	"	"
1,1,1-Trichloroethane (TCA)	" "	"	"
1,1-Dichloroethylene (DCE)	" "	"	"
Methylene Chloride	" "	"	"
Toluene	" "	"	"

3. A check for the presence of visible oil residues or odors of solvents or hydrocarbons in the waste discharge shall be made daily and recorded. The presence of any of these constituents shall be reported to the Executive Officer of the Board within 24 hours of detection.

B. Receiving Water Monitoring

Once per week, where applicable, two samples shall be collected from the receiving water and analyzed for turbidity and dissolved oxygen. One sample shall be collected at a conveniently located station 25 to 50 feet upstream from the point of discharge. The other sample shall be collected at a conveniently located station 50 to 100 feet downstream from the point of discharge.

<sup>1</sup>If chlorination is utilized for treatment of wastes.

C. Reporting

1. The discharger shall implement the above monitoring program with the commencement of the discharge. Monitoring reports shall be submitted by the dates in the following schedule:

<u>Report</u>	<u>Monitoring Period</u>	<u>Report Due</u>
Daily and Weekly Effluent Monitoring	Monthly	Within 30 days of the end of the monitoring period
Weekly Receiving Water Monitoring	"	" " " " "

2. If no discharge occurs during the previous monitoring period, a report to that effect shall be submitted in lieu of a monitoring report.
3. All reports shall be arranged in a tabular format to clearly show compliance or noncompliance with each discharge specification.
4. All reports shall be signed by a responsible officer or duly authorized employee of the discharger and shall be submitted under penalty of perjury.

Ordered by

JAMES R. BENNETT  
Executive Officer

November 13, 1987



ATTACHMENT "B"

N0000

N0200

N0400

N0600

N0800

N1000

N1200

N1400

BOLSA CHICA CHANNEL

BOLSA CHICA ROAD

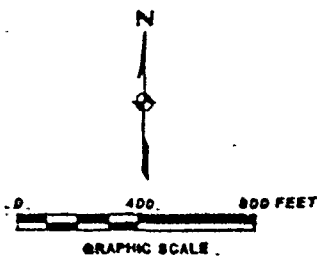
Storm Drain from  
Building No. 28  
to Bolsa Chica  
Channel

<b>FACILITIES</b> <small>ENGINEER</small> <small>ROBERT L. BOWMAN, AUTOMATIC COMPANY</small>		DRAIN NO. 28/29 CHECKED APPROVED	FOR DEPT. A3-700 ACCOUNT	USER ID: 330 STORM DRAINS
<b>UNDERGROUND</b>		APPROVALS		
<b>STORM DRAINS</b>		SCALE NOE		
DRAWING NUMBER <b>A3-700-5-0400</b>		REVISIONS		

008E3

152

CLAVE



# LEGEND

- MONITORING WELL-K/JJC
- EXISTING PIEZOMETER

## BUILDING AND TRAILER LEGEND

- |                  |                       |                       |
|------------------|-----------------------|-----------------------|
| 10 1000 BUILDING | 20 STRUCT & EQUIP LAB | 30 MASTER SUE STATION |
| 11 1000 BUILDING | 21 1000 BUILDING      | 31 1000 BUILDING      |
| 12 1000 BUILDING | 22 1000 BUILDING      | 32 BOOSTER PUMPS      |
| 13 1000 BUILDING | 23 1000 BUILDING      | 33 1000 BUILDING      |
| 14 1000 BUILDING | 24 1000 BUILDING      | 34 1000 BUILDING      |
| 15 1000 BUILDING | 25 1000 BUILDING      | 35 1000 BUILDING      |
| 16 1000 BUILDING | 26 1000 BUILDING      | 36 1000 BUILDING      |
| 17 1000 BUILDING | 27 1000 BUILDING      | 37 1000 BUILDING      |
| 18 1000 BUILDING | 28 1000 BUILDING      | 38 1000 BUILDING      |
| 19 1000 BUILDING | 29 1000 BUILDING      | 39 1000 BUILDING      |
| 20 1000 BUILDING | 30 1000 BUILDING      | 40 1000 BUILDING      |
| 21 1000 BUILDING | 31 1000 BUILDING      | 41 1000 BUILDING      |
| 22 1000 BUILDING | 32 1000 BUILDING      | 42 1000 BUILDING      |
| 23 1000 BUILDING | 33 1000 BUILDING      | 43 1000 BUILDING      |
| 24 1000 BUILDING | 34 1000 BUILDING      | 44 1000 BUILDING      |
| 25 1000 BUILDING | 35 1000 BUILDING      | 45 1000 BUILDING      |
| 26 1000 BUILDING | 36 1000 BUILDING      | 46 1000 BUILDING      |
| 27 1000 BUILDING | 37 1000 BUILDING      | 47 1000 BUILDING      |
| 28 1000 BUILDING | 38 1000 BUILDING      | 48 1000 BUILDING      |
| 29 1000 BUILDING | 39 1000 BUILDING      | 49 1000 BUILDING      |
| 30 1000 BUILDING | 40 1000 BUILDING      | 50 1000 BUILDING      |
| 31 1000 BUILDING | 41 1000 BUILDING      | 51 1000 BUILDING      |
| 32 1000 BUILDING | 42 1000 BUILDING      | 52 1000 BUILDING      |
| 33 1000 BUILDING | 43 1000 BUILDING      | 53 1000 BUILDING      |
| 34 1000 BUILDING | 44 1000 BUILDING      | 54 1000 BUILDING      |
| 35 1000 BUILDING | 45 1000 BUILDING      | 55 1000 BUILDING      |
| 36 1000 BUILDING | 46 1000 BUILDING      | 56 1000 BUILDING      |
| 37 1000 BUILDING | 47 1000 BUILDING      | 57 1000 BUILDING      |
| 38 1000 BUILDING | 48 1000 BUILDING      | 58 1000 BUILDING      |
| 39 1000 BUILDING | 49 1000 BUILDING      | 59 1000 BUILDING      |
| 40 1000 BUILDING | 50 1000 BUILDING      | 60 1000 BUILDING      |
| 41 1000 BUILDING | 51 1000 BUILDING      | 61 1000 BUILDING      |
| 42 1000 BUILDING | 52 1000 BUILDING      | 62 1000 BUILDING      |
| 43 1000 BUILDING | 53 1000 BUILDING      | 63 1000 BUILDING      |
| 44 1000 BUILDING | 54 1000 BUILDING      | 64 1000 BUILDING      |
| 45 1000 BUILDING | 55 1000 BUILDING      | 65 1000 BUILDING      |
| 46 1000 BUILDING | 56 1000 BUILDING      | 66 1000 BUILDING      |
| 47 1000 BUILDING | 57 1000 BUILDING      | 67 1000 BUILDING      |
| 48 1000 BUILDING | 58 1000 BUILDING      | 68 1000 BUILDING      |
| 49 1000 BUILDING | 59 1000 BUILDING      | 69 1000 BUILDING      |
| 50 1000 BUILDING | 60 1000 BUILDING      | 70 1000 BUILDING      |
| 51 1000 BUILDING | 61 1000 BUILDING      | 71 1000 BUILDING      |
| 52 1000 BUILDING | 62 1000 BUILDING      | 72 1000 BUILDING      |
| 53 1000 BUILDING | 63 1000 BUILDING      | 73 1000 BUILDING      |
| 54 1000 BUILDING | 64 1000 BUILDING      | 74 1000 BUILDING      |
| 55 1000 BUILDING | 65 1000 BUILDING      | 75 1000 BUILDING      |
| 56 1000 BUILDING | 66 1000 BUILDING      | 76 1000 BUILDING      |
| 57 1000 BUILDING | 67 1000 BUILDING      | 77 1000 BUILDING      |
| 58 1000 BUILDING | 68 1000 BUILDING      | 78 1000 BUILDING      |
| 59 1000 BUILDING | 69 1000 BUILDING      | 79 1000 BUILDING      |
| 60 1000 BUILDING | 70 1000 BUILDING      | 80 1000 BUILDING      |
| 61 1000 BUILDING | 71 1000 BUILDING      | 81 1000 BUILDING      |
| 62 1000 BUILDING | 72 1000 BUILDING      | 82 1000 BUILDING      |
| 63 1000 BUILDING | 73 1000 BUILDING      | 83 1000 BUILDING      |
| 64 1000 BUILDING | 74 1000 BUILDING      | 84 1000 BUILDING      |
| 65 1000 BUILDING | 75 1000 BUILDING      | 85 1000 BUILDING      |
| 66 1000 BUILDING | 76 1000 BUILDING      | 86 1000 BUILDING      |
| 67 1000 BUILDING | 77 1000 BUILDING      | 87 1000 BUILDING      |
| 68 1000 BUILDING | 78 1000 BUILDING      | 88 1000 BUILDING      |
| 69 1000 BUILDING | 79 1000 BUILDING      | 89 1000 BUILDING      |
| 70 1000 BUILDING | 80 1000 BUILDING      | 90 1000 BUILDING      |
| 71 1000 BUILDING | 81 1000 BUILDING      | 91 1000 BUILDING      |
| 72 1000 BUILDING | 82 1000 BUILDING      | 92 1000 BUILDING      |
| 73 1000 BUILDING | 83 1000 BUILDING      | 93 1000 BUILDING      |
| 74 1000 BUILDING | 84 1000 BUILDING      | 94 1000 BUILDING      |
| 75 1000 BUILDING | 85 1000 BUILDING      | 95 1000 BUILDING      |
| 76 1000 BUILDING | 86 1000 BUILDING      | 96 1000 BUILDING      |
| 77 1000 BUILDING | 87 1000 BUILDING      | 97 1000 BUILDING      |
| 78 1000 BUILDING | 88 1000 BUILDING      | 98 1000 BUILDING      |
| 79 1000 BUILDING | 89 1000 BUILDING      | 99 1000 BUILDING      |
| 80 1000 BUILDING | 90 1000 BUILDING      | 100 1000 BUILDING     |

FREON.....160,000 ppb  
 ACETONE.....3,500,000  
 TCE.....12,000  
 1,1-DCE.....7,400  
 1,1,1-TCA.....35,000  
 1,1,2-TCA.....<500  
 1,1-DCA.....2,800  
 CHLOROFORM.....<500  
 METHYLENE CL.....1,500,000  
 TOLUENE.....600

TCE.....860 ppb  
 1,1-DCE.....120  
 1,1,1-TCA.....150  
 1,1,2-TCA.....<100  
 1,1-DCA.....<100  
 CHLOROFORM.....2,100  
 METHYLENE CL.....<100  
 TOLUENE.....<100

FREON.....50 ppb  
 TCE.....41  
 1,1-DCE.....39  
 1,1,1-TCA.....420  
 1,1,2-TCA.....10  
 1,1-DCA.....23  
 CHLOROFORM.....<5  
 METHYLENE CL.....<5  
 TOLUENE.....<5

# FX-9 Wells

Dewatering

Attachment "C"  
 Order No. 87-134

September 1987  
 K/JJC 856464.00  
 GROUNDWATER SAMPLES (7-30-87)  
 RESULTS SHOWN IN BOXES



# PRIORITY POLLUTANTS

## Metals

Antimony  
Arsenic  
Beryllium  
Cadmium  
Chromium  
Copper  
Lead  
Mercury  
Nickel  
Selenium  
Silver  
Thallium  
Zinc

## Miscellaneous

Cyanide  
Asbestos\*

\*Not required unless  
specifically requested.

## Pesticides

Aldrin  
Chlordane  
Dieldrin  
4, 4' - DDT  
4, 4' - DDE  
4, 4' - DDD  
Alpha Endosulfan  
Beta Endosulfan  
Endosulfan Sulfate  
Endrin  
Endrin Aldehyde  
Heptachlor  
Heptachlor Epoxide  
Alpha BHC  
Beta BHC  
Gamma BHC  
Delta BHC  
Toxaphene  
PCB 1016  
PCB 1221  
PCB 1232  
PCB 1242  
PCB 1248  
PCB 1254  
PCB 1260

Method 625

## Base/Neutral Extractibles

Acenaphthene  
Benzidine  
1, 2, 4 - Trichlorobenzene  
Hexachlorobenzene  
Hexachloroethane  
Bis (2-Chloroethyl) Ether  
2 - Chloronaphthalene  
1, 2 - Dichlorobenzene  
1, 3 - Dichlorobenzene  
1, 4 - Dichlorobenzene  
3, 3' - Dichlorobenzidine  
2, 4 - Dinitrotoluene  
2, 6 - Dinitrotoluene  
1, 2 - Diphenylhydrazine  
Fluoranthene  
4 - Chlorophenyl Phenyl Ether  
4 - Bromophenyl Phenyl Ether  
Bis (2 - Chloroisopropyl) Ether  
Bis (2 - Chloroethoxy) Methane  
Hexachlorobutadiene  
Hexachlorocyclopentadiene  
Isophorone  
Naphthalene  
Nitrobenzene  
N - Nitrosodimethylamine  
N - Nitrosodi - N - Propylamine  
N - Nitrosodiphenylamine  
Bis (2 - Ethylhexyl) Phthalate  
Butyl Benzyl Phthalate  
Di - N - Butyl Phthalate  
Di - N - Octyl Phthalate  
Diethyl Phthalate  
Dimethyl Phthalate  
Benzo (A) Anthracene  
Benzo (A) Pyrene  
Benzo (B) Fluoranthene  
Benzo (K) Fluoranthene  
Chrysene  
Acenaphthylene  
Anthracene  
1, 12 - Benzoperylene  
Fluorene  
Phenanthrene  
1, 2, 5, 6 - Dibenanthracene  
Indeno (1, 2, 3 - CD) Pyrene  
Pyrene  
TCDD

Method 625

## Acid Extractibles

2, 4, 6 - Trichlorophenol  
P - Chloro - M - Cresol  
2 - Chlorophenol  
2, 4 - Dichlorophenol  
2, 4 - Dimethylphenol  
2 - Nitrophenol  
4 - Nitrophenol  
2, 4 - Dinitrophenol  
4, 6 - Dinitro - O - Cresol  
Pentachlorophenol  
Phenol

Method 625

## Volatile Organics

Acrolein  
Acrylonitrile  
Benzene  
Carbon Tetrachloride  
Chlorobenzene  
1, 2 - Dichloroethane  
1, 1, 1 - Trichloroethane  
1, 1 - Dichloroethane  
1, 1, 2 - Trichloroethane  
1, 1, 2, 2 - Tetrachloroethane  
Chloroethane  
Chloroform  
1, 1 - Dichloroethylene  
1, 2 - Trans Dichloroethylene  
1, 2 - Dichloropropane  
1, 2 - Dichloropropylene  
Ethylbenzene  
Methylene Chloride  
Methyl Chloride  
Methyl Bromide  
Bromoform  
Bromodichloromethane  
Trichlorofluoromethane  
Dichlorodifluoromethane  
Dibromochloromethane  
Tetrachloroethylene  
Toluene  
Trichloroethylene  
Vinyl Chloride  
Bis (chloromethyl) Ether  
2 - Chloroethyl Vinyl Ether

Method 624

APPENDIX D

- Correspondence DHS
- Contact Reports

DEPARTMENT OF HEALTH SERVICES  
TOXIC SUBSTANCES CONTROL DIVISION  
REGION 4  
245 WEST BROADWAY, SUITE 350  
LONG BEACH, CA 90802  
(213) 590-4868



February 1, 1989

Ms. Nira Yamachika  
Environmental Resources Specialist  
Orange County Water District  
P. O. Box 8300  
Fountain Valley, CA 92728-8300

Dear Ms. Yamachika:

REQUEST FOR INFORMATION

The Department of Health Services is in the process of conducting Preliminary Assessments on the following sites located in Orange County, California:

- McDonnell Douglas Astronautics  
5301 Bolsa Avenue  
Huntington Beach, CA 92649
- Polymer Development Labs #2  
15731 Graham Avenue  
Huntington Beach, CA 92674
- Hunter Thurmond Oil  
523 17th Street  
Huntington Beach, CA 92648

The information necessary to conduct a preliminary assessment are as follows:

- o the distance to the nearest well from each site;
- o identification of active wells within 1 mile radius of the site;
- o past and/or present records of well contamination or records of any well closure due to contamination within a one mile radius.
- o the depth to the first water bearing aquifer.
- o the depth to the aquifer the city draws from.
- o identify the approximate population served by the nearest well.
- o identify the groundwater gradient.
- o identify the closest downgradient well and/or the closest two up gradient wells.

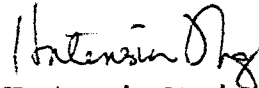
Ms. Nira Yamachika

Page 2

February 1, 1989

Enclosed is a map locating the sites. Thank you for your assistance. If there are any questions, please do not hesitate to contact me at (213) 590-4915.

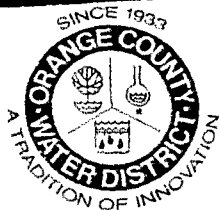
Sincerely,



Hortensia Muniz  
Waste Management Engineer  
Site Mitigation Unit  
Region 4 (Long Beach)  
Toxic Substances Control Division

Enclosure

HM:cc



ORANGE COUNTY WATER DISTRICT  
MAILING ADDRESS: P.O. BOX 8300  
FOUNTAIN VALLEY, CA 92728-8300

10500 ELLIS AVENUE, FOUNTAIN VALLEY  
TELEPHONE (714) 963-5661  
FAX (714) 963-7472

DEPARTMENT OF HEALTH SERVICES  
TOXIC SUBSTANCES CONTROL DIVISION  
245 WEST BROADWAY, SUITE 350  
LONG BEACH, CA 90802  
ATTN: HORTENSIA MUNIZ

DATE 2/21/89  
SUBJECT GROUNDWATER INFORMATION  
FOR 3 SITES IN HUNTINGTON BEACH

THE FOLLOWING ITEMS ARE

☒ ENCLOSED

☒ REQUESTED

☐ SENT SEPARATELY VIA \_\_\_\_\_

NO. OF COPIES	DESCRIPTION
3	MAP SHOWING ACTIVE WELL LOCATIONS WITHIN A 1mi. RADIUS
1	EACH - VOA ANALYSIS FOR SWN WITHIN 1mi. RADIUS
1	EACH - WELL INFORMATION CARD FOR SWN WITHIN 1mi. RADIUS
2	GROUNDWATER CONTOUR MAP (1988) - DRAFT

THE ABOVE ITEMS ARE SUBMITTED

☒ AT YOUR REQUEST

☐ FOR YOUR REVIEW

☐ FOR YOUR SIGNATURE

☐ FOR YOUR FILES

☐ FOR YOUR ACTION

☐ FOR YOUR INFORMATION

COMMENTS groundwater is in SW direction towards ocean

RECEIVED

FEB 22 1989

TOXIC SUBSTANCES CONTROL DIVISION  
REGION 4  
LONG BEACH

BY Steve Clark

OWNER: City of Huntington Beach

ADDRESS: P.O. Box 190

Huntington Beach, CA 92646

Attn: E. A. Elevatorski

DRILLED BY: Beylik Drilling

ADDRESS: LaHabra, CA

SWN: 5S/11W-9J2

WPFN: 95-04-10D

OID: McCrometer HB Well #7

USE: 1 MUN 7 15 8

PHONE: \_\_\_\_\_

DATE DRILLED: 5-2-75

LOG ON FILE: yes

## FX-9 Wells

DEPTH: 930' DIA: (0-240') 32"  
(240'930) 16"

SPECIFIC DEPTH OF PERFORATIONS:

(263-551)

(591-699)

(735-879)

KIND OF PUMP: NAT. GAS  
Johnston Deep Well

METER NO. 73-12-137 HP: 400

FREQ. OF SAMPLING: \_\_\_\_\_

GR OR RP ELEVATION: \_\_\_\_\_

REMARKS: 12" discharge BOWLS: 150'

OCWD E-13

5/1-12

HB

OWNER: City of Huntington Beach

ADDRESS: P.O. Box 190

Huntington Beach, CA 92646

Attn: E. A. Elevatorski

DRILLED BY: Beylik Drilling Co.

ADDRESS: LaHabra, CA

SWN: 5S/11W-9J1

WPFN: 95-04-10C

OID: Well #4

USE: 1 DOM 7 15 8

PHONE: \_\_\_\_\_

DATE DRILLED: 1967 (MAR-25)

LOG ON FILE: YES

## FX-9 Wells

DEPTH: 804 DIA: 16"

SPECIFIC DEPTH OF PERFORATIONS:

(252-804)

KIND OF PUMP: Layne & Bowler

METER NO.: 73-12-199 HP: 200

FREQ. OF SAMPLING: \_\_\_\_\_

GR OR RP ELEVATION: \_\_\_\_\_

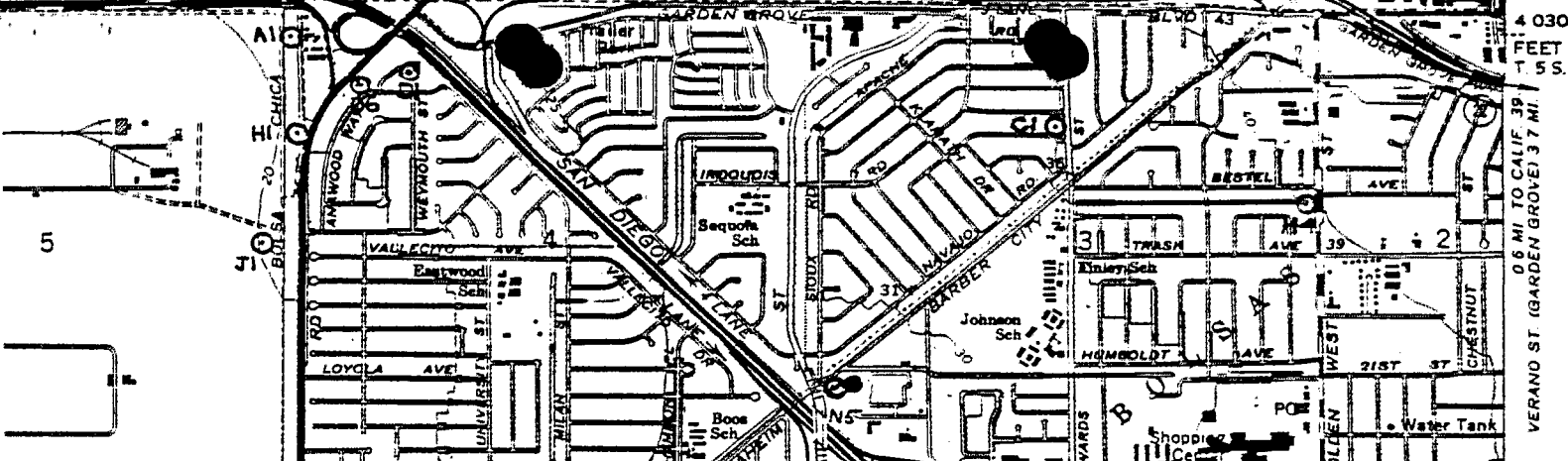
REMARKS: 12" discharge BOWLS: 200'

OCWD E-13

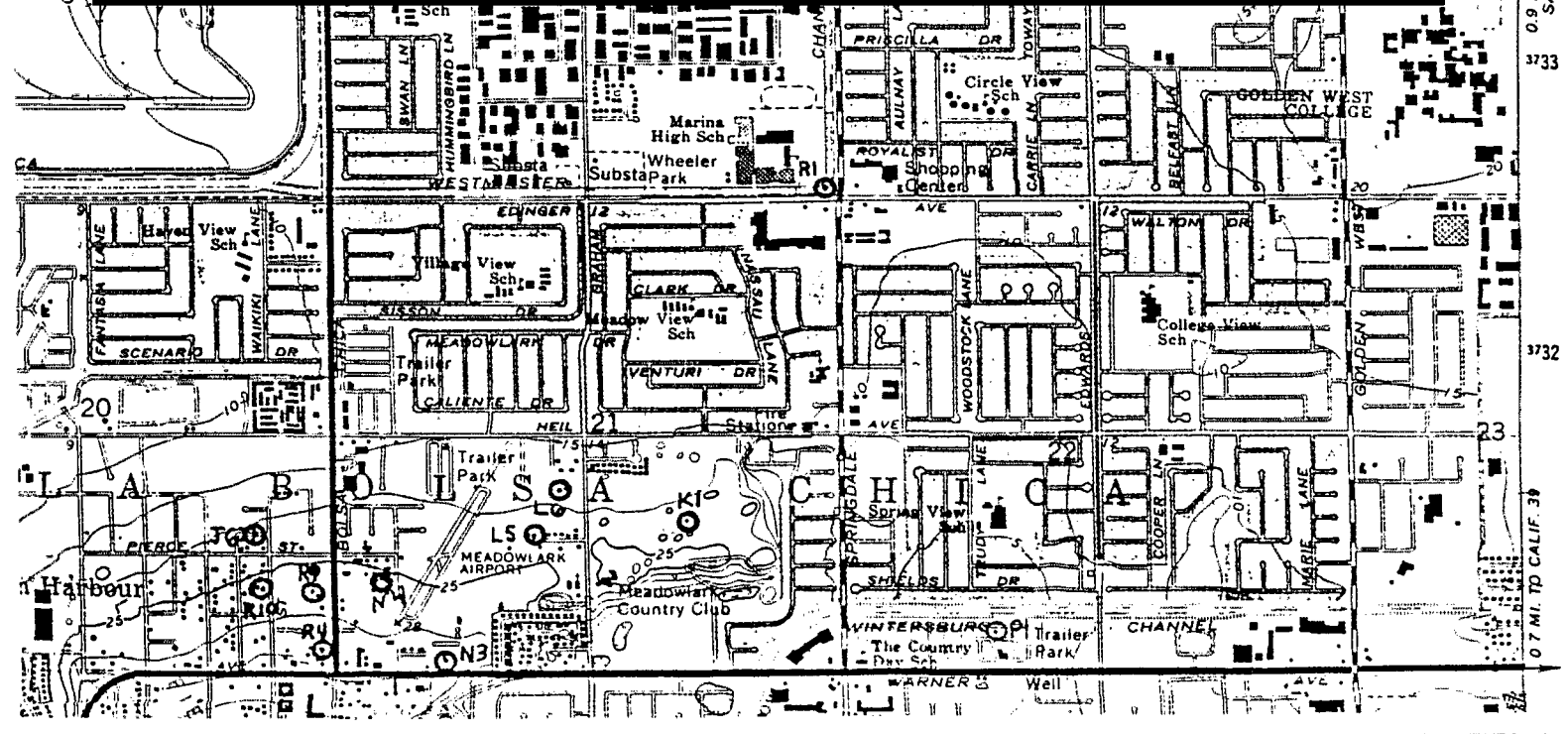
5/1-21

HB

# FX-9 Wells



# FX-9 Wells



4 030 00  
FEET (7)  
T 5 S.  
0.6 MI. TO CALIF. 39  
VERANO ST. (GARDEN GROVE) 37 MI.  
3735000  
32° 45'  
33° 45'  
580,000  
FEET (6)  
3734  
405  
0.9 MI. TO CALIF. 39  
SAN DIEGO 87 MI.  
3733  
3732  
0.7 MI. TO CALIF. 39



OWNER: City of Huntington Beach

ADDRESS: P.O. Box 190

Huntington Beach, CA 92646

Attn: E. A. Elevatorski

DRILLED BY: Orange Co. Pump Co.

ADDRESS: Norwalk, CA

SWN: 5S/11W-15D3

WPFN: 106-27-4C

OID: Well #1

USE: MUN/DOM

PHONE: \_\_\_\_\_

DATE DRILLED: 11-19-56

LOG ON FILE: yes

## FX-9 Wells

DEPTH: 306' DIA: 12"

SPECIFIC DEPTH OF PERFORATIONS:  
(265-291)

KIND OF PUMP: Submersible Layne & Bowler

METER NO.: 54252 HP: 100

FREQ. OF SAMPLING: \_\_\_\_\_

GR OR RP ELEVATION: \_\_\_\_\_

REMARKS: 8" discharge BOWLS 130'

OCWD E-13

OWNER: City of Westminster

ADDRESS: 8200 Westminster Ave.

Westminster, CA 92683

SWN: 5S/11W-10D6

WPFN: 95-07-3-A

OID: Well #8

USE: MUN

PHONE: 898-3311

DRILLED BY: \_\_\_\_\_

DATE DRILLED: 1968

ADDRESS: \_\_\_\_\_

LOG ON FILE: No

## FX-9 Wells

DEPTH: 455 DIA: 12"

SPECIFIC DEPTH OF PERFORATIONS:  
130-330

KIND OF PUMP: McCrometer

METER NO.: 78-922C&S HP: 30

FREQ. OF SAMPLING: \_\_\_\_\_

GR OR RP ELEVATION: \_\_\_\_\_

REMARKS: \_\_\_\_\_

14-F6

OCWD E-13

WEST

OCWD GC ANALYSIS  
FOR VOLATILE ORGANICS

5/11-951

State Well Number  
Sample Site Information:

HUNTINGTON BEACH #4

DATE SAMPLED	10-5-88	10-5-88	11-1-88				
DATE ANALYZED	10-6-88	10-6-88	11-15-88				
SAMPLED BY	RS	RS	SD				
EPA METHOD USED FOR ANALYSIS	502.2	502.2	502.2				
CONSTITUENTS (µg/L)		*					
Chloromethane	ND	ND	ND				
Bromomethane	ND	ND	ND				
Vinyl Chloride	ND	ND	ND				
Chloroethane	ND	ND	ND				
Methylene Chloride	ND	ND	ND				
1,1 Dichloroethylene (DCE)	ND	ND	ND				
1,1 Dichloroethane	ND	ND	ND				
Chloroform	ND	ND	ND				
Carbon Tetrachloride	ND	ND	ND				
1,2-Dichloropropane	ND	ND	ND				
Trichloroethylene (TCE)	ND	ND	ND				
1,1,2- Trichloroethane	ND	ND	ND				
Dibromochloromethane	ND	ND	ND				
Tetrachloroethylene (PCE)	TR*	TR*	ND				
Chlorobenzene	ND	ND	ND				
1,2 Dichlorobenzene	ND	ND	ND				
1,3 Dichlorobenzene	ND	ND	ND				
1,4 Dichlorobenzene	ND	ND	ND				
Trichlorofluoromethane	ND	ND	ND				
t- 1,2- Dichloroethylene	ND	ND	ND				
1,2 Dichloroethane	ND	ND	ND				
1,1,1 Trichloroethane (TCA)	ND	ND	ND				
Bromodichloromethane	ND	ND	ND				
t- 1,3-Dichloropropene	ND	ND	ND				
c- 1,3-Dichloropropene	ND	ND	ND				
Benzene	ND	ND	ND				
Bromoform	ND	ND	ND				
1,1,2,2-Tetrachloroethane	ND	ND	ND				
Toluene	ND	ND	ND				
Ethylbenzene	ND	ND	ND				
EC @ 25°C (µmho/cm)	-	-	-				
TOC (mg/L)	-	-	-				

0.5 µg/L as reportable detection limit on all constituents listed on this page  
Remarks on other side.

LAB:GCform:REV 10/13/88  
ocwd lab-21

N.D.- non-detect

N.A.- not analyzed

TR.- Trace-constituent was seen, but below  
reportable detection limit

OCWD GC ANALYSIS  
FOR VOLATILE ORGANICS

5/11-951

State Well Number  
Sample Site Information:

HUNTINGTON BEACH #4

DATE SAMPLED	10-5-88	10-5-88	11-1-88				
DATE ANALYZED	10-6-88	10-6-88	11-15-88				
SAMPLED BY	RS	RS	SD				
EPA METHOD USED FOR ANALYSIS	502.2	502.2	502.2				
CONSTITUENTS (µg/L)		*					
Dichlorodifluoromethane	ND	ND	ND				
2,2-Dichloropropane	ND	ND	ND				
c-1,2-Dichloroethylene	ND	ND	ND				
Bromochloromethane	ND	ND	ND				
1,1-Dichloropropene	ND	ND	ND				
Dibromomethane	ND	ND	ND				
1,3- Dichloropropane	ND	ND	ND				
1,2-Dibromoethane	ND	ND	ND				
1,1,1,2-Tetrachloroethane	ND	ND	ND				
m-xylene	ND	ND	ND				
p-xylene	ND	ND	ND				
o-xylene	ND	ND	ND				
Styrene	ND	ND	ND				
Isopropylbenzene	ND	ND	ND				
1,2,3- Trichloropropane	ND	ND	ND				
n-Propylbenzene	ND	ND	ND				
Bromobenzene	ND	ND	ND				
1,3,5-Trimethylbenzene	ND	ND	ND				
2- Chlorotoluene	ND	ND	ND				
4- Chlorotoluene	ND	ND	ND				
tert-Butylbenzene	ND	ND	ND				
1,2,4-Trimethylbenzene	ND	ND	ND				
sec-Butylbenzene	ND	ND	ND				
p-Isopropyltoluene	ND	ND	ND				
n-Butylbenzene	ND	ND	ND				
1,2-Dibromo-3-Chloropropane	ND	ND	ND				
1,2,4-Trichlorobenzene	ND	ND	ND				
Hexachlorobutadiene	ND	ND	ND				
Naphthalene	ND	ND	ND				
1,2,3-Trichlorobenzene	ND	ND	ND				
EC @ 25°C (µmho/cm)	395	-	391				
TOC (mg/L)	0.1	-	0.4				

µg/L as reportable detection limit on all constituents listed on this page

Remarks on other side.

N.D.-non-detect

N.A.-not analyzed

TR. Trace-constituent was seen, but below  
reportable detection limit.LAB:GCform:REV 10/13/88  
ocwd lab-21

OCWD GC ANALYSIS  
FOR VOLATILE ORGANICS

5/11-952

State Well Number  
Sample Site Information:

HUNTINGTON BEACH #7

DATE SAMPLED	10-5-88	11-1-88					
DATE ANALYZED	10-6-88	11-15-88					
SAMPLED BY	RS	SD					
EPA METHOD USED FOR ANALYSIS	502.2	502.2					
CONSTITUENTS (µg/L)							
Chloromethane	ND	ND					
Bromomethane	ND	ND					
Vinyl Chloride	ND	ND					
Chloroethane	ND	ND					
Methylene Chloride	ND	ND					
1,1 Dichloroethylene (DCE)	ND	ND					
1,1 Dichloroethane	ND	ND					
Chloroform	LC	ND					
Carbon Tetrachloride	ND	ND					
1,2-Dichloropropane	LC	ND					
Trichloroethylene (TCE)	ND	ND					
1,1,2- Trichloroethane	ND	ND					
Dibromochloromethane	ND	ND					
Tetrachloroethylene (PCE)	TR*	ND					
Chlorobenzene	ND	ND					
1,2 Dichlorobenzene	ND	ND					
1,3 Dichlorobenzene	ND	ND					
1,4 Dichlorobenzene	ND	ND					
Trichlorofluoromethane	ND	ND					
t- 1,2- Dichloroethylene	ND	ND					
1,2 Dichloroethane	ND	ND					
1,1,1 Trichloroethane (TCA)	ND	ND					
Bromodichloromethane	ND	ND					
t- 1,3-Dichloropropene	ND	ND					
c- 1,3-Dichloropropene	ND	ND					
Benzene	ND	ND					
Bromoform	ND	ND					
1,1,2,2-Tetrachloroethane	ND	ND					
Toluene	ND	ND					
Ethylbenzene	ND	ND					
EC @ 25°C (µmho/cm)	-	-					
TOC (mg/L)	-	-					

0.5 µg/L as reportable detection limit on all constituents listed on this page  
Remarks on other side.

LAB:GCform:REV 10/13/88  
ocwd lab-21

N.D.- non-detect

N.A.- not analyzed

TR.- Trace-constituent was seen, but below  
reportable detection limit.

OCWD GC ANALYSIS  
FOR VOLATILE ORGANICS

5/11-952

State Well Number  
Sample Site Information:

HURTINGTON BEACH #7

DATE SAMPLED	10-5-88	11-1-88					
DATE ANALYZED	10-6-88	11-15-88					
SAMPLED BY	RS	SD					
EPA METHOD USED FOR ANALYSIS	502.2	502.2					
CONSTITUENTS (µg/L)							
Dichlorodifluoromethane	ND	ND					
2,2-Dichloropropane	ND	ND					
c-1,2-Dichloroethylene	ND	ND					
Bromochloromethane	ND	ND					
1,1-Dichloropropene	ND	ND					
Dibromomethane	ND	ND					
1,3-Dichloropropane	ND	ND					
1,2-Dibromoethane	ND	ND					
1,1,1,2-Tetrachloroethane	ND	ND					
m-xylene	ND	ND					
p-xylene	ND	ND					
o-xylene	ND	ND					
Styrene	ND	ND					
Isopropylbenzene	ND	ND					
1,2,3-Trichloropropane	ND	ND					
n-Propylbenzene	ND	ND					
Bromobenzene	ND	ND					
1,3,5-Trimethylbenzene	ND	ND					
2-Chlorotoluene	ND	ND					
4-Chlorotoluene	ND	ND					
tert-Butylbenzene	ND	ND					
1,2,4-Trimethylbenzene	ND	ND					
sec-Butylbenzene	ND	ND					
p-Isopropyltoluene	ND	ND					
n-Butylbenzene	ND	ND					
1,2-Dibromo-3-Chloropropane	ND	ND					
1,2,4-Trichlorobenzene	ND	ND					
Hexachlorobutadiene	ND	ND					
Naphthalene	ND	ND					
1,2,3-Trichlorobenzene	ND	ND					
EC @ 25°C (µmho/cm)	477	411					
TOC (mg/L)	0.5	0.6					

µg/L as reportable detection limit on all constituents listed on this page

Remarks on other side.

LAB:GCform:REV 10/13/88  
ocwd lab-21

N.D.-non-detect

N.A.-not analyzed

TR. Trace-constituent was seen, but below  
reportable detection limit.

OCWD GC ANALYSIS  
FOR VOLATILE ORGANICS

11-11-1006

State Well Number  
Sample Site Information:

WESTMINSTER #8

DATE SAMPLED	11-2-88	11-7-88					
DATE ANALYZED	11-15-88	11-15-88					
SAMPLED BY	SC	SC					
EPA METHOD USED FOR ANALYSIS	502.2	502.2					
CONSTITUENTS (µg/L)		*					
Chloromethane	ND	ND					
Bromomethane	ND	ND					
Vinyl Chloride	ND	ND					
Chloroethane	ND	ND					
Methylene Chloride	ND	ND					
1,1 Dichloroethylene (DCE)	ND	ND					
1,1 Dichloroethane	ND	ND					
Chloroform	ND	ND					
Carbon Tetrachloride	ND	ND					
1,2-Dichloropropane	ND	ND					
Trichloroethylene (TCE)	ND	ND					
1,1,2- Trichloroethane	ND	ND					
Dibromochloromethane	ND	ND					
Tetrachloroethylene (PCE)	ND	ND					
Chlorobenzene	ND	ND					
1,2 Dichlorobenzene	ND	ND					
1,3 Dichlorobenzene	ND	ND					
1,4 Dichlorobenzene	ND	ND					
Trichlorofluoromethane	ND	ND					
t- 1,2- Dichloroethylene	ND	ND					
1,2 Dichloroethane	ND	ND					
1,1,1 Trichloroethane (TCA)	ND	ND					
Bromodichloromethane	ND	ND					
t- 1,3-Dichloropropene	ND	ND					
c- 1,3-Dichloropropene	ND	ND					
Benzene	ND	ND					
Bromoform	ND	ND					
1,1,2,2-Tetrachloroethane	ND	ND					
Toluene	ND	ND					
Ethylbenzene	ND	ND					
EC @ 25°C (µmho/cm)	-	-					
TOC (mg/L)	-	-					

0.5 µg/L as reportable detection limit on all constituents listed on this page  
Remarks on other side.

LAB:GCform:REV 10/13/88  
ocwd lab-21

N.D.- non-detect

N.A.- not analyzed

TR.- Trace-constituent was seen, but below  
reportable detection limit.

OCWD GC ANALYSIS  
FOR VOLATILE ORGANICS

5/11-1006

State Well Number  
Sample Site Information:

WESTAINGER #B

DATE SAMPLED	11-2-88	11-2-88					
DATE ANALYZED	11-15-88	11-15-88					
SAMPLED BY	SD	SD					
EPA METHOD USED FOR ANALYSIS	502.2	502.2					
CONSTITUENTS (µg/L)							
Dichlorodifluoromethane	ND	ND					
2,2-Dichloropropane	ND	ND					
c-1,2-Dichloroethylene	ND	ND					
Bromochloromethane	ND	ND					
1,1-Dichloropropene	ND	ND					
Dibromomethane	ND	ND					
1,3- Dichloropropane	ND	ND					
1,2-Dibromoethane	ND	ND					
1,1,1,2-Tetrachloroethane	ND	ND					
m-xylene	ND	ND					
p-xylene	ND	ND					
o-xylene	ND	ND					
Styrene	ND	ND					
Isopropylbenzene	ND	ND					
1,2,3- Trichloropropane	ND	ND					
n-Propylbenzene	ND	ND					
Bromobenzene	ND	ND					
1,3,5-Trimethylbenzene	ND	ND					
2- Chlorotoluene	ND	ND					
4- Chlorotoluene	ND	ND					
tert-Butylbenzene	ND	ND					
1,2,4-Trimethylbenzene	ND	ND					
sec-Butylbenzene	ND	ND					
p-Isopropyltoluene	ND	ND					
n-Butylbenzene	ND	ND					
1,2-Dibromo-3-Chloropropane	ND	ND					
1,2,4-Trichlorobenzene	ND	ND					
Hexachlorobutadiene	ND	ND					
Naphthalene	ND	ND					
1,2,3-Trichlorobenzene	ND	ND					
EC @ 25°C (µmho/cm)	447	-					
TOC (mg/L)	0.4	-					

µg/L as reportable detection limit on all constituents listed on this page  
Remarks on other side.

N.D.-non-detect

N.A.-not analyzed

TR. Trace-constituent was seen, but below  
reportable detection limit.LAB:GCform:REV 10/13/88  
ocwd lab-21

OCWD GC ANALYSIS  
FOR VOLATILE ORGANICS

5/11-15D3

State Well Number  
Sample Site Information:

HUNTINGTON BEACH #1

DATE SAMPLED	10-5-88	11-1-88					
DATE ANALYZED	10-6-88	11-14-88					
SAMPLED BY	RS	SD					
EPA METHOD USED FOR ANALYSIS	502.2	502.2					
CONSTITUENTS (µg/L)							
Chloromethane	ND	ND					
Bromomethane	ND	ND					
Vinyl Chloride	ND	ND					
Chloroethane	ND	ND					
Methylene Chloride	ND	ND					
1,1 Dichloroethylene (DCE)	ND	ND					
1,1 Dichloroethane	ND	ND					
Chloroform	ND	ND					
Carbon Tetrachloride	ND	ND					
1,2-Dichloropropane	ND	ND					
Trichloroethylene (TCE)	ND	ND					
1,1,2- Trichloroethane	ND	ND					
Dibromochloromethane	ND	ND					
Tetrachloroethylene (PCE)	TR *	ND					
Chlorobenzene	ND	ND					
1,2 Dichlorobenzene	ND	ND					
1,3 Dichlorobenzene	ND	ND					
1,4 Dichlorobenzene	ND	ND					
Trichlorofluoromethane	ND	ND					
t- 1,2- Dichloroethylene	ND	ND					
1,2 Dichloroethane	ND	ND					
1,1,1 Trichloroethane (TCA)	ND	ND					
Bromodichloromethane	ND	ND					
t- 1,3-Dichloropropene	ND	ND					
c- 1,3-Dichloropropene	ND	ND					
Benzene	ND	ND					
Bromoform	ND	ND					
1,1,2,2-Tetrachloroethane	ND	ND					
Toluene	ND	ND					
Ethylbenzene	ND	ND					
EC @ 25°C (µmho/cm)	-	-					
TOC (mg/L)	-	-					

0.5 µg/L as reportable detection limit on all constituents listed on this page  
Remarks on other side.

LAB:GCform:REV 10/13/88  
ocwd lab-21

N.D.- non-detect

N.A.- not analyzed

TR.- Trace-constituent was seen, but below  
reportable detection limit.



OCWD GC ANALYSIS  
FOR VOLATILE ORGANICS

5/11-15D3

State Well Number  
Sample Site Information:

HUNTINGTON BEACH #1

DATE SAMPLED	10-5-88	11-1-88					
DATE ANALYZED	10-6-88	11-14-88					
SAMPLED BY	RS	JD					
EPA METHOD USED FOR ANALYSIS	502.2	502.2					
CONSTITUENTS (ug/L)							
Dichlorodifluoromethane	ND	ND					
2,2-Dichloropropane	ND	ND					
c-1,2-Dichloroethylene	ND	ND					
Bromochloromethane	ND	ND					
1,1-Dichloropropene	ND	ND					
Dibromomethane	ND	ND					
1,3- Dichloropropane	ND	ND					
1,2-Dibromoethane	ND	ND					
1,1,1,2-Tetrachloroethane	ND	ND					
m-xylene	ND	ND					
p-xylene	ND	ND					
o-xylene	ND	ND					
Styrene	ND	ND					
Isopropylbenzene	ND	ND					
1,2,3- Trichloropropane	ND	ND					
n-Propylbenzene	ND	ND					
Bromobenzene	ND	ND					
1,3,5-Trimethylbenzene	ND	ND					
2- Chlorotoluene	ND	ND					
4- Chlorotoluene	ND	ND					
tert-Butylbenzene	ND	ND					
1,2,4-Trimethylbenzene	ND	ND					
sec-Butylbenzene	ND	ND					
p-Isopropyltoluene	ND	ND					
n-Butylbenzene	ND	ND					
1,2-Dibromo-3-Chloropropane	ND	ND					
1,2,4-Trichlorobenzene	ND	ND					
Hexachlorobutadiene	ND	ND					
Naphthalene	ND	ND					
1,2,3-Trichlorobenzene	ND	ND					
EC @ 25°C (umho/cm)	552	548					
TOC (mg/L)	0.9	0.5					

ug/L as reportable detection limit on all constituents listed on this page

Remarks on other side.

LAB:GCform:REV 10/13/88  
ocwd lab-21

N.D.-non-detect

N.A.-not analyzed

TR. Trace-constituent was seen, but below  
reportable detection limit.

**RECEIVED**

**FEB 22 1989**

**TOXIC SUBSTANCES CONTROL DIVISION  
REGION 4  
LONG BEACH**

## DEPARTMENT OF HEALTH SERVICES

TOXIC SUBSTANCES CONTROL DIVISION  
REGION 4

245 WEST BROADWAY, SUITE 350

LONG BEACH, CA 90802

(213) 590-4868



February 8, 1989

Diane Cotto  
SCAQMD  
9150 Fair Drive  
El Monte, CA 91731

Dear Ms. Cotto:

## REQUEST FOR INFORMATION

The Department of Health Services has been awarded a grant from the U.S. Environmental Protection Agency (EPA) to complete Preliminary Assessments (PA) of facilities and sites which historically may have handled, stored and/or transported hazardous materials or substances.

Preliminary Assessments involve file searches of state and local agencies to collect available information on the facility's past waste handling and disposal practices.

In an effort to complete these requirements we request your assistance in providing pertinent information on the enclosed list of facilities and former sites; that addresses any of the following issues.

- o nature and quantity of hazardous materials;
- o potential for exposure;
- o potentially affected population and/or environment; (within a 3 mile radius)
- o regulatory status, such as past and/or present violations. (copies of permits, violations, etc.)

Please do not hesitate to contact me should questions arise at (213) 590-4915.

Sincerely,

Hortensia Muniz  
Waste Management Engineer  
Site Mitigation Unit  
Region 4 (Long Beach)  
Toxic Substances Control Division

Enclosure

HM/pr

FY 89  
LIST OF SITES  
FOR THE CERCLA GRANT  
(REGION 4 - LONG BEACH)

10/11/88

SITE NAME AND ADDRESS

ORANGE COUNTY

- 1 Arnold Circuits  
310 East 4th Avenue  
La Habra, CA 90631
- 2 Avalon Chemical Company  
1230 Street Gertrude  
Santa Ana, CA 92707
- 3 Burris Sand Pit  
15292 East Lincoln Avenue  
Anaheim, CA 92806
- 4 Consolidated Thermoplastics  
2520 S. Birch Street  
Santa Ana, CA 92702
- 5 Hunter-Thurmond Oil  
523 17th Street  
Huntington Beach, CA 92648
- 6 McDonnell Douglas Astronautics  
5301 Bolsa  
Huntington Beach, CA 92649
- 7 Metropolitan Circuits Inc. #2  
1261 Logan Avenue  
Costa Mesa, CA 92626
- 8 Polymer Development Lab 32  
15731 Graham Avenue  
Huntington Beach, CA 92674
- 9 Rockford Aerospace Products  
17300 Redhill  
Irvine, CA 92717
- 10 U.S. Polymeric  
700 East Dyer Road  
Santa Ana, CA 92707

SAN DIEGO COUNTY

- 11 Heavy Equipment Lot  
1475 J Street  
San Diego, CA 92101



South Coast  
AIR QUALITY MANAGEMENT DISTRICT  
9150 FLAIR DRIVE, EL MONTE, CA 91731 (818) 572-6200

March 9, 1989  
Ref. No.:2-157-89

Re: Public Records Act Request

Dear Requestor:

This letter is in response to your letter dated February 8, 1989 wherein you requested disclosure of a number of sites located in Orange County and San Diego County.

Enclosed herein is the material specified above. You will be billed for this material under a separate cover.

Sincerely,

Diane Cotto  
Public Records

**RECEIVED**

**MAR 13 1989**

TOXIC SUBSTANCES CONTROL DIVISION  
REGION 4  
LONG BEACH

dc  
Enclosure

## DEPARTMENT OF HEALTH SERVICES

TOXIC SUBSTANCES CONTROL DIVISION

REGION 4

245 WEST BROADWAY, SUITE 350

LONG BEACH, CA 90802

(213) 590-4868



March 22, 1989

Jean Marie Legacy  
Health Care Agency  
P.O. Box 355  
Santa Ana, CA 92702

Dear Ms. Legacy:

## REQUEST FOR INFORMATION

The Department of Health Services has been awarded a grant from the U.S. Environmental Protection Agency (EPA) to complete Preliminary Assessments (PA) of facilities and sites which historically may have handled, stored and/or transported hazardous materials or substances.

Preliminary Assessments involve file searches of state and local agencies to collect available information on the facility's past waste handling and disposal practices.

In an effort to complete these requirements we request your assistance in providing pertinent information on the enclosed list of facilities.

Please do not hesitate to contact Hortensia Muniz should questions arise at (213) 590-4915.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Hortensia Muniz'.

Hortensia Muniz  
Waste Management Engineer  
Site Mitigation Unit  
Region 4 (Long Beach)  
Toxic Substances Control Division



TOM URAM  
DIRECTOR

CAROL D. KISSER  
DIRECTOR OF ADMINISTRATION

JEAN MARIE LEGACY  
CUSTODIAN OF RECORDS  
HEALTH CARE AGENCY  
P.O. BOX 355  
SANTA ANA, CA 92702  
(834-3446)

# ADMINISTRATIVE SERVICES

515 N. SYCAMORE  
SANTA ANA, CALIFORNIA 92701  
(714) 834-4467

## REQUEST FOR RECORDS

The undersigned Hortensia Muniz hereby requests a copy of records prepared and maintained in the ordinary course of business concerned at or near the time of the act, condition, or event which they depict by the County of Orange Health Care Agency.

The records requested are public documents and are not protected by Federal or State confidentiality statutes. Nevertheless, should any confidential information pertaining to individuals or entities, corporations, partnerships, or organizations be inadvertently included in any of the records requested the undersigned agrees to protect that confidentiality and recognizes that unauthorized release or disclosure of confidential information may make the undersigned subject to civil action under provisions of Federal and California statutes.

The specific records requested are: McDonnell Douglas Astronautics Company  
5301 Bolsa Avenue  
Huntington Beach CA 92647

The records are required for the purpose of: Preliminary Assessment Report  
for DHS - Toxics Division, at EPA's request.

I understand that the County will charge .10c per page copied and \$4.00 for each fifteen minutes of clerical time

Hortensia Muniz  
Signature of Requestor  
Address 245 W Broadway 3rd Floor  
Long Beach, CA 90802

3.24.89  
Date  
Phone (213) 590-4915



# COUNTY OF ORANGE

## HEALTH CARE AGENCY

TOM URAM  
DIRECTOR

CAROL D. KISER  
DIRECTOR OF ADMINISTRATION

### ADMINISTRATIVE SERVICES

515 N. SYCAMORE  
SANTA ANA, CALIFORNIA 92701  
(714) 834-3446

### Hazardous Waste Information Checklist

Please check the appropriate items below. This will enable us to search the actual files that you need, therefore, cutting down the time spent searching for records that you may not want, and also on cost to you.

- ☒ Computer (routine inspection for Hazardous Waste and Underground Storage Tanks)
- ☒ Underground Storage Tank files (permits and monitoring)
- ☒ Leaking Underground Storage Tank files
- ☐ Underground Storage Tank Plan Check (plans and blueprints)
- ☒ Hazardous Waste Spill Response Logs (emergency incidents involving chemicals)
- ☒ Hazardous and Infectious Waste Investigation Request files (complaints regarding illegal disposal or storage)
- ☒ Hazardous Waste Site Cleanup files (industry cleanup)
- ☐ List of Underground Storage Tanks (computer printout for all O.C.)
- ☐ List of Leaking Underground Storage Tanks (computer printout for all O.C.)
- ☐ List of Hazardous Waste Generators (computer printout for all O.C.)
- ☐ Orange County Landfill Inventory Report 1981 (list of old solid waste landfills, 12 page report)
- ☐ Proposition 65 reports
- ☐ Auditor Controller (records of payments)

Return this checklist along with the General Request form to Health Care Agency, County of Orange, P.O. Box 355, Santa Ana, CA 92702, Attention: Jean-Marie Legacy, Custodian of Records.



CONTACT REPORT

AGENCY: City of Huntington Beach - Water Operations

ADDRESS:

PERSON

CONTACTED: Ed Barbley

PHONE: (714) 536-5424

FROM:

TO:

DATE: 3-27-89

SUBJECT: Population served by wells #7 #1 and #8

Population served depends on the demand for a particular day. Water is normally introduced into the system and once its in the system the water essentially goes anywhere from one mile to several miles. The water may ultimately serve 10,000 people. Water from #4 is pumped into a reservoir and blended with water from #2 and then pumped out into the distribution.

#1 is a small producing well serves from 200-300, #7 varies alot and services anywhere from 1000-1500 at one time, all are ultimately mixed.

CONTACT REPORT

AGENCY: ORANGE COUNTY HEALTH CARE AGENCY - ENVIRONMENTAL HEALTH

ADDRESS:

PERSON

CONTACTED: Robert (Bob) Holmes

PHONE: (714) 834-8174

BY: Hortensia Muniz

DATE/TIME: 3-24-89/8:45

SUBJECT: McDonnell Douglas

8. Comments: Note that Mc'Donnell Douglas owns parcel # 195-111-06 which is at 5301 Bolsa. Douglas Realty (perhaps ~~division~~ <sup>division</sup> of Mc'Donnell Douglas) has a sub-parcel within this parcel. Douglas Realty (parcel # 195-111-01) also has address of 5301 Bolsa.  
PA must clarify site & what is being investigated

# ~~Also~~ Also note that FINDS and HWIS show that facility at 5301 BOLSA in Huntington Beach is called "Mc'Donnell Douglas Corp."  
"Mc'Donnell Douglas Astronautics Co." is located in Monrovia (LA County) according to find  
Please verify & clarify in PA / ASPIS forms

To: \_\_\_\_\_

From: R. CRANDALL

Phone: 916-324-3782

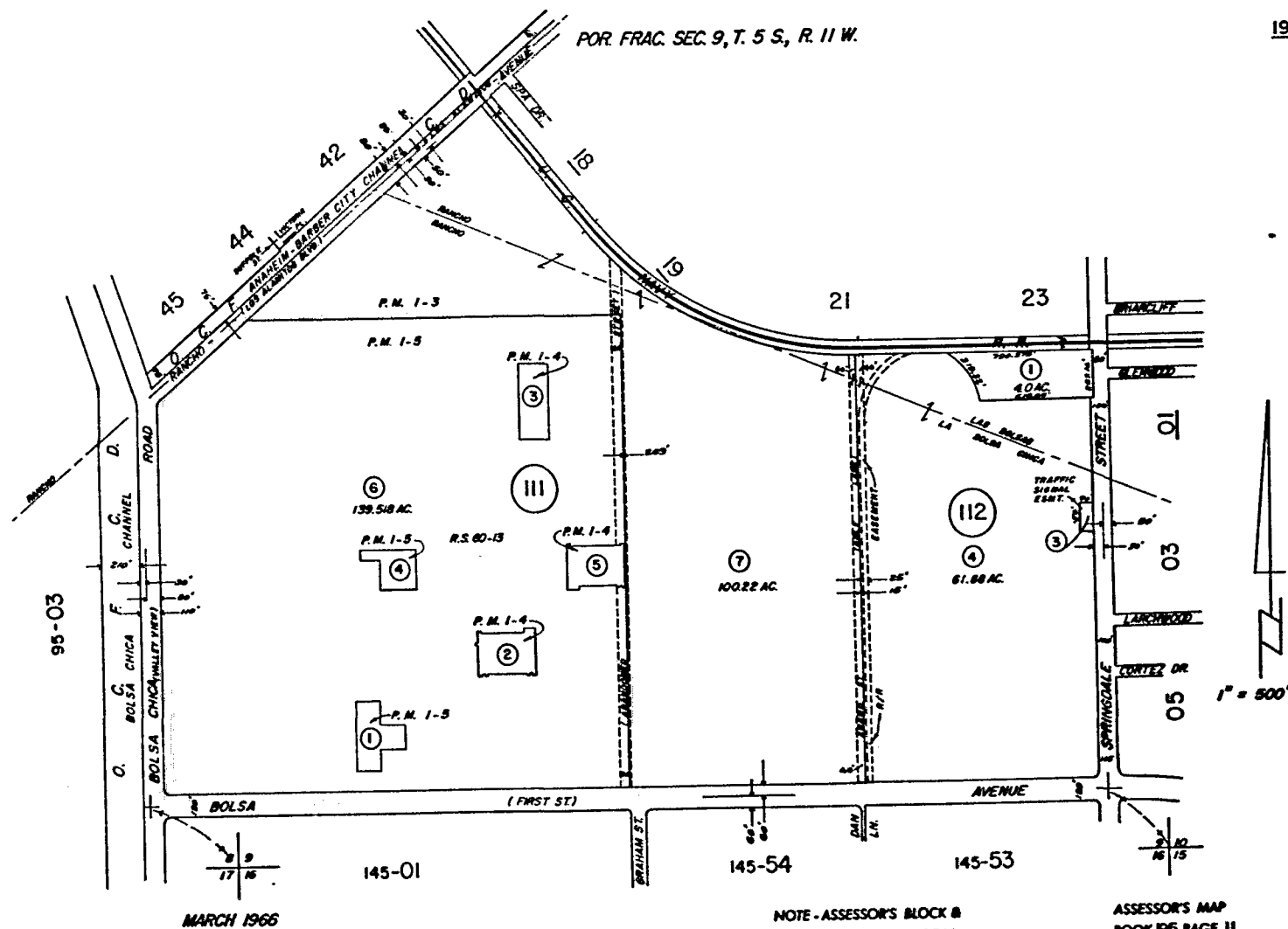
Date: \_\_\_\_\_

PA PRE-PACKAGE CHECKLIST

Site Name: MCDONNELL DOUGLAS ASTRONAUTICS  
ASPIS No.: 30-37-0194  
Address: 5301 BOLSA, HUNTINGTON BEACH 92649  
Parcel No.: 195-111-06 (maybe also 195-111-01)  
Coordinates: 334448 1175924

PRINT-OUTS

1. ASPIS: INCLUDED
2. Annual/Biennial Report: \_\_\_\_\_
3. FINDS: HWDMs, CDS, CERELIS
4. HWMDs: #
5. HWIS: INCLUDED
6. Real Estate Information:
  - a. Plat Map(s): INCLUDED
  - b. Owner List: INCLUDED
  - c. Address List: INCLUDED
  - d. Parcel List: INCLUDED
7. Other (Specify): \_\_\_\_\_  
\_\_\_\_\_



NOTE - ASSESSOR'S BLOCK &  
PARCEL NUMBERS  
SHOWN IN CIRCLES

ASSESSOR'S MAP  
BOOK 135 PAGE 11  
COUNTY OF ORANGE

REFERENCE MAP